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**Datasheet for the decision  
of 21 September 2010**

**Case Number:** T 1251/07 - 3.3.01

**Application Number:** 01962915.3

**Publication Number:** 1309599

**IPC:** C07F 7/08

**Language of the proceedings:** EN

**Title of invention:**  
Surface-active photoinitiators

**Applicant:**  
Ciba Holding Inc.

**Headword:**  
Photoinitiators/CIBA

**Relevant legal provisions:**  
EPC Art. 123(2), 82, 111(2)

**Relevant legal provisions (EPC 1973):**

-

**Keyword:**  
"Art. 123(2) - requirements met for the main request"  
"Unity of invention - reasons given do not apply"  
"Remittal to the department of first instance for further  
examination"

**Decisions cited:**  
T 0034/90

**Catchword:**

-



Case Number: T 1251/07 - 3.3.01

**D E C I S I O N**  
of the Technical Board of Appeal 3.3.01  
of 21 September 2010

**Appellant:** Ciba Holding Inc.  
Klybeckstrasse 141  
CH-4057 Basel (CH)

**Representative:** -

**Decision under appeal:** Decision of the Examining Division of the  
European Patent Office posted 10 May 2007  
refusing European patent application  
No. 01962915.3 pursuant to Article 97(1) EPC  
1973.

**Composition of the Board:**

**Chairman:** P. Ranguis  
**Members:** C. M. Radke  
C.-P. Brandt

## Summary of Facts and Submissions

I. The applicant filed an appeal against the decision of the Examining Division to refuse European patent application No. 01 962 915.3.

II. The documents cited during the examination proceedings included the following:

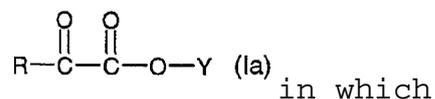
(D1) EP-A-0 161 830

(D3) WO-A-98/33 761

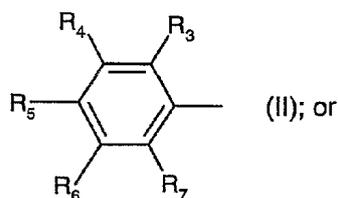
(D9) US-A-4 507 187.

III. The refusal was based on claims 1 to 12, filed with the letter dated 19 February 2007, claim 1 reading as follows:

"1. A compound of the formula Ia



R is radical of the formula II



R is naphthyl, anthracyl, phenanthryl or a heterocyclic radical, the radicals naphthyl, anthracyl, phenanthryl and the heterocyclic radical being unsubstituted or substituted by A-X-C<sub>1</sub>-C<sub>8</sub>alkyl, phenyl, OR<sub>8</sub>, SR<sub>9</sub> and/or NR<sub>10</sub>R<sub>11</sub>, where the substituents OR<sub>8</sub>, SR<sub>9</sub> and NR<sub>10</sub>R<sub>11</sub> may form 5- or 6-membered rings via the radicals R<sub>8</sub>, R<sub>9</sub>, R<sub>10</sub> and/or R<sub>11</sub> with further substituents on the naphthyl,

anthracyl or phenanthryl ring or on the heterocycle or with one of the carbon atoms of the naphthyl, anthracyl or phenanthryl ring or with one of the carbon atoms of the heterocycle; with the proviso that at least one substituent A-X- is present in the radical R;

R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub> and R<sub>7</sub> independently of one another are hydrogen; A-X- unsubstituted C<sub>1</sub>-C<sub>12</sub>alkyl or C<sub>1</sub>-C<sub>12</sub>alkyl substituted by OH, C<sub>1</sub>-C<sub>4</sub>alkoxy, phenyl, naphthyl, halogen, CN and/or -O(CO)R<sub>12</sub>; or are C<sub>2</sub>-C<sub>12</sub>alkyl interrupted by one or more non-successive oxygen atoms; or

R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub> and R<sub>7</sub> are halogen, OR<sub>8</sub>, SR<sub>9</sub>, NR<sub>10</sub>R<sub>11</sub>, unsubstituted or C<sub>1</sub>-C<sub>4</sub>alkyl- and/or C<sub>1</sub>-C<sub>4</sub>alkoxy-substituted phenyl, where the substituents OR<sub>8</sub>, SR<sub>9</sub>, NR<sub>10</sub>R<sub>11</sub> may form 5- or 6-membered rings via the radicals R<sub>8</sub>, R<sub>9</sub>, R<sub>10</sub> and/or R<sub>11</sub> with further substituents on the phenyl ring or one of the carbon atoms of the phenyl ring; with the proviso that at least one radical R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub> or R<sub>7</sub> is A-X-;

R<sub>8</sub> and R<sub>9</sub> independently of one another are hydrogen; unsubstituted C<sub>1</sub>-C<sub>12</sub>alkyl or C<sub>1</sub>-C<sub>12</sub>alkyl substituted by OH, C<sub>1</sub>-C<sub>4</sub>alkoxy, phenyl, phenoxy and/or -O(CO)R<sub>12</sub>; or are C<sub>2</sub>-C<sub>12</sub>alkyl interrupted by one or more non-successive oxygen atoms; or are unsubstituted phenyl, C<sub>3</sub>-C<sub>6</sub>alkenyl, cyclopentyl, cyclohexyl or naphthyl; or are C<sub>1</sub>-C<sub>4</sub>alkoxy-, phenyl- and/or C<sub>1</sub>-C<sub>4</sub>alkyl substituted phenyl, C<sub>3</sub>-C<sub>6</sub>alkenyl, cyclopentyl, cyclohexyl or naphthyl;

R<sub>10</sub> and R<sub>11</sub> independently of one another are hydrogen; unsubstituted C<sub>1</sub>-C<sub>12</sub>alkyl or C<sub>1</sub>-C<sub>12</sub>alkyl substituted by OH, C<sub>1</sub>-C<sub>4</sub>alkoxy and/or phenyl; or are C<sub>2</sub>-C<sub>12</sub>alkyl interrupted by one or more non-successive

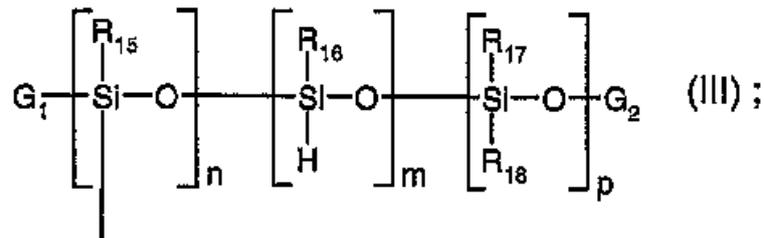
oxygen atoms; or are phenyl,  $-(CO)R_{12}$  or  $SO_2R_{13}$ ; or  $R_{10}$  and  $R_{11}$ , together with the nitrogen atom to which they are attached, form a 5-, 6- or 7-membered ring which is uninterrupted or interrupted by  $-O-$  or  $-NR_{14}-$ ;

$R_{12}$  is  $C_1-C_8$ alkyl; unsubstituted phenyl or phenyl substituted by  $C_1-C_4$ alkyl and/or  $C_1-C_4$ alkoxy;

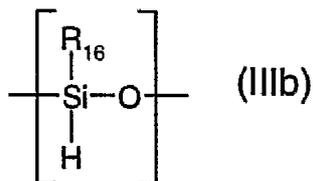
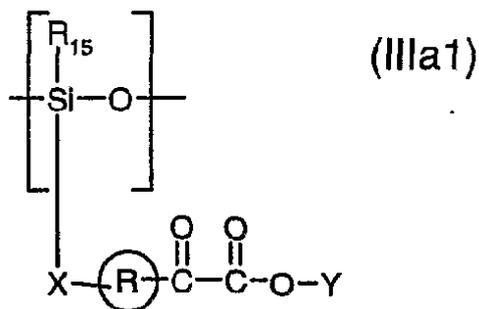
$R_{13}$  is  $C_1-C_{12}$ alkyl, unsubstituted phenyl or phenyl substituted by  $C_1-C_4$ alkyl;

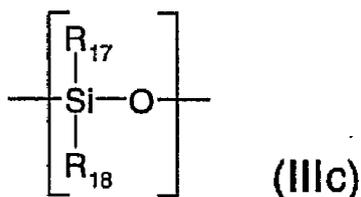
$R_{14}$  is hydrogen; unsubstituted  $C_1-C_8$ alkyl;  $C_1-C_8$ alkyl substituted by  $OH$  or  $C_1-C_4$ alkoxy; unsubstituted phenyl; or phenyl substituted by  $OH$ ,  $C_1-C_4$ alkyl or  $C_1-C_4$ alkoxy;

A is a surface-active radical of the formula III



in which the units IIIa1, IIIb and/or IIIc





are distributed randomly or in blocks and in which the circle is intended to show that an aromatic radical R as defined above is a divalent radical and is substituted via the bridges X with the corresponding silyl radical; or

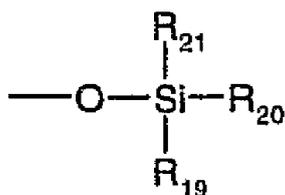
A is a surface-active radical  $A_0$ ; where  $A_0$  is  $C_6$ - $C_{30}$ alkyl,  $C_6$ - $C_{30}$ alkenyl,  $C_6$ - $C_{30}$ alkynyl,  $C_6$ - $C_{30}$ aralkyl,  $C_6$ - $C_{30}$ alkyl-(CO)-,  $C_6$ - $C_{30}$ alkenyl-(CO)-,  $C_6$ - $C_{30}$ alkynyl-(CO)-,  $C_6$ - $C_{30}$ aralkyl-(CO)-,  $C_6$ - $C_{30}$ alkyl-Si( $R_{15}$ )( $R_{16}$ )-,  $C_6$ - $C_{30}$ alkenyl-Si( $R_{15}$ )( $R_{16}$ )-,  $C_6$ - $C_{30}$ alkynyl-Si( $R_{15}$ )( $R_{16}$ )-, these radicals being unsubstituted or substituted by OH,  $C_1$ - $C_4$ alkoxy, phenyl, naphthyl, halogen, CN,  $SR_9$ ,  $NR_{10}R_{11}$  and/or  $-O(CO)R_{12}$  and these radicals being uninterrupted or interrupted by one or more  $-O-$ ,  $-S-$  or  $-NR_{14}-$ ;

n is a number from 1 to 1000 or, if the siloxane starting material is a mixture of oligomeric siloxanes, n may alternatively be less than 1 but greater than 0;

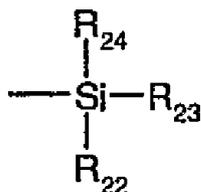
m is a number from 0 to 100;

p is a number 0-10 000;

$G_1$  is  $C_1$ - $C_{18}$ alkyl or a radical of the formula



$G_2$  is  $C_1$ - $C_{18}$ alkyl or a radical of the formula



with the proviso that, if  $G_2 = \text{alkyl}$ , the radical  $G_2$  is attached directly to the silicon atom without an oxygen bridge; or

$G_1$  and  $G_2$  together are a single bond;

$R_{15}$ ,  $R_{16}$ ,  $R_{17}$ ,  $R_{19}$ ,  $R_{20}$ ,  $R_{21}$ ,  $R_{22}$ ,  $R_{23}$  and  $R_{24}$  independently of one another are  $C_1$ - $C_{18}$ alkyl, phenyl,  $C_2$ - $C_6$ -hydroxyalkyl,  $C_2$ - $C_6$ -aminoalkyl or  $C_5$ - $C_8$ cycloalkyl;  $R_{18}$  is unsubstituted  $C_1$ - $C_{18}$ alkyl,  $C_5$ - $C_8$ cycloalkyl; or is  $C_1$ - $C_{18}$ alkyl substituted by hydroxyl,  $C_1$ - $C_{12}$ alkoxy, halogen,  $C_3$ - $C_8$ cycloalkyl and/or  $N(R_{10})(R_{11})$ ; or is unsubstituted phenyl or phenyl substituted by  $C_1$ - $C_{12}$ alkyl,  $C_1$ - $C_{12}$ alkoxy, halogen, hydroxyl and/or  $N(R_{10})(R_{11})$ ;

X if A is a radical of the formula III, X is a single bond,  $C_1$ - $C_{10}$ alkylene,  $C_2$ - $C_{10}$ alkenylene,  $C_2$ - $C_{10}$ alkynylene,  $-(CH_2)_a-O-$ ,  $-O-(CH_2)_a-$ ,  $-O-(CH_2)_a-O-$ ,  $-(CH_2)_a-O-(CH_2)_b-$ ,  $-(CH_2)_a-O-(CH_2)_b-O-$ ,  $-(CH_2)_a-NR_{14}-(CH_2)_b-$ ,  $-(CH_2)_a-NR_{14}-$ ,  $-(CH_2)_a-O-(CH_2)_b-NR_{14}-(CH_2)_c-$ ,  $-(CH_2)_a-O-(CH_2)_b-NR_{14}-$ ,  $-(C_2-C_{10}alkenylene)-O-(CH_2)_a-$ ,  $-(C_2-C_{10}alkenylene)-O-$ ,  $-(C_2-C_{10}alkynylene)-O-(CH_2)_a-$ ,  $-(C_2-C_{10}alkynylene)-O-$ ,  $-(C_2-C_{10}alkenylene)-O-(CH_2)_a-O-$ ,  $-(C_2-C_{10}alkynylene)-O-(CH_2)_a-O-$ ,  $-(C_2-C_{10}alkenylene)-NR_{14}-(CH_2)_a-$ ,  $-(C_2-C_{10}alkenylene)-NR_{14}-$ ,  $-(C_2-C_{10}alkynylene)-NR_{14}-(CH_2)_a-$ ,  $-(C_2-C_{10}alkynylene)-NR_{14}-$ ,  $-(C_2-C_{10}alkenylene)-O-(CH_2)_a-NR_{14}-$  or  $-(C_2-C_{10}alkynylene)-O-(CH_2)_a-NR_{14}-$ ; and

X if A has the definition of  $A_0$ , X is a single bond,  $-O-$ ,  $-S-$  or  $-NR_{14}-$ ;

a, b and c independently of one another are a number

from 0 to 10; but with the proviso that they are at least 1 if the methylene group in question is between two oxygen atoms or between one oxygen atom and one nitrogen atom;

Y is hydrogen; unsubstituted C<sub>1</sub>-C<sub>20</sub>alkyl or C<sub>1</sub>-C<sub>20</sub>alkyl substituted by a group A-X-; unsubstituted C<sub>2</sub>-C<sub>18</sub>alkenyl or C<sub>2</sub>-C<sub>18</sub>alkenyl substituted by a group A-X-; unsubstituted C<sub>2</sub>-C<sub>18</sub>alkynyl or C<sub>2</sub>-C<sub>18</sub>alkynyl substituted by a group A-X-; or Y is phenyl, naphthyl, anthracyl or phenanthryl, these radicals being unsubstituted or substituted by one or more groups A-X-and/or C<sub>1</sub>-C<sub>12</sub>alkyl; or Y is C<sub>1</sub>-C<sub>4</sub>alkyl which is substituted by phenyl, naphthyl, anthracyl, phenanthryl and if desired additionally by a group A-X-; or Y is the salt radical of the respective glyoxalic acid;"

IV. The Examining Division decided that these claims did not meet the requirements of Article 123(2) EPC so that the objections under Article 82 as to unity of invention were maintained.

The Examining Division considered that

- the proviso "that at least one substituent A-X- is present in the radical R;" in the definition of the radical R, and
- the proviso "that at least one radical R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub> or R<sub>7</sub> is A-X-;" in the definition of the radicals R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub> or R<sub>7</sub>

had no basis in the application as originally filed.

Therefore the objection as to unity was maintained. This objection was raised in the communication dated 23 August 2006. It was based on the fact that the

common structural element of the formulae (Ia) to (Ic) in claim 1 then on file, namely the one of the formula -C-C(O)-C(O)-O-, was also present in the compounds disclosed in Document (D1) which had the same properties as the ones presently claimed. The Examining Division considered that similar objections could be based on document (D3) or (D9).

V. The present claims are those filed with the letter dated 28 June 2007 setting out the grounds for appeal. These are

- claims 1 to 12 of the main request,
- claims 1 to 12 of the first auxiliary request, and
- claims 1 to 10 of the second auxiliary request.

The claims of the main request are identical to those on which the decision under appeal was based (see under point III above).

VI. The applicant argued that the provisos objected to formed part of claim 1 as originally filed. Furthermore, the claims met the requirement of unity of invention as the claimed compounds shared the arylglyoxalate structure having a substituent -AX at the aryl group as the new structural element.

VII. The applicant requested that the decision under appeal be set aside and that the present application be reconsidered on the basis of the claims of the main request or on the basis of the claims of the first or second auxiliary requests, all these requests being submitted with the letter dated 28 June 2007. The applicant did not request oral proceedings.

## Reasons for the Decision

1. The appeal is admissible.

### Main request

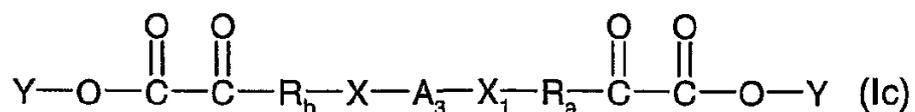
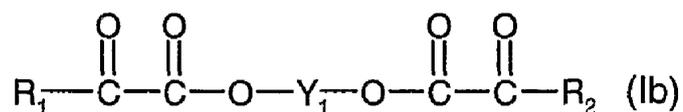
2. Article 123(2) EPC

- 2.1 The objections of the Examining Division concerned the following provisos:

- "that at least one substituent A-X- is present in the radical R;" in the definition of the radical R (PROVISO 1), and
- "that at least one radical R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub> or R<sub>7</sub> is A-X-;" in the definition of the radicals R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub> or R<sub>7</sub> (PROVISO 2).

PROVISO 1 appears in claims 1 and 2, PROVISO 2 in claims 1 to 3 of the main request.

- 2.1.1 Present claim 1 differs from claim 1 as originally filed *inter alia* in that the compounds are now limited to formula (Ia) by deleting the alternative formulae (Ib) and (Ic).



This limitation meets the requirements of Article 123(2) EPC as formula (Ia) is explicitly disclosed in claim 1 as originally filed.

#### 2.1.2 PROVISO 1

This proviso in claim 1 as originally filed appears in the definition of the radicals R, R<sub>1</sub> and R<sub>2</sub> on page 72 and reads as follows:

"with the proviso that at least one substituent A-X-, A<sub>1</sub>-X<sub>1</sub>- or A<sub>2</sub>-X<sub>2</sub>- is present in the radical R or in at least one of the radicals R<sub>1</sub> or R<sub>2</sub>;"

The deletion of formula (Ib) in present claim 1 required that the definitions of the radicals R<sub>1</sub> and R<sub>2</sub> defined only for this formula be deleted.

The definitions of the radicals A, A<sub>1</sub> and A<sub>2</sub> in claim 1 as originally filed are identical, as are the definitions of X, X<sub>1</sub> and X<sub>2</sub> (see the reference to "A, A<sub>1</sub> and A<sub>2</sub>" in the left margins on pages 73 and 74 as originally filed; see the reference to "X, X<sub>1</sub> and X<sub>2</sub>" in the left margins on pages 75 and 76 as originally filed).

The deletion of the definitions of the radicals R<sub>1</sub> and R<sub>2</sub> renders the separate definitions of A-X-, A<sub>1</sub>-X<sub>1</sub>- and A<sub>2</sub>-X<sub>2</sub>- superfluous. Consequently, said proviso in the application as filed could be properly adapted as follows:

"with the proviso that at least one substituent A-X- is present in the radical R;", i.e. to PROVISO 1.

Hence, the amended PROVISIO 1 in present claims 1 and 2 does not contravene the requirements of Article 123(2) EPC.

### 2.1.3 PROVISIO 2

This proviso in claim 1 as originally filed appears on page 72, line 1 and 2 and reads as follows:

"with the proviso that at least one radical  $R_3$ ,  $R_4$ ,  $R_5$ ,  $R_6$  or  $R_7$  is A-X-,  $A_1-X_1$ - or  $A_2-X_2$ -i".

For the reason set out under point 2.1.2 above, the separate definitions of A-X-,  $A_1-X_1$ - and  $A_2-X_2$ - became superfluous in present claim 1.

Consequently, said proviso in the application as filed could be properly adapted as follows:

"with the proviso that at least one radical  $R_3$ ,  $R_4$ ,  $R_5$ ,  $R_6$  or  $R_7$  is A-X-i", i.e. to PROVISIO 2.

Hence, also the amended PROVISIO 2 in present claims 1 to 3 does not contravene the requirements of Article 123(2) EPC.

2.2 In general, present claims 1 to 3, 4 and 5 to 12 are based on claims 1 to 3, 4 and 5, and 6-13 as originally filed.

2.3 Consequently, the amended claims of the main request meet the requirements of Article 123(2) EPC.

3. Unity of invention

3.1 Under point 2 of the reasons for the decision under appeal, the Examining Division remarked that due to the fact that the claims on file did not meet the requirements of Article 123(2) EPC, the objection as to lack of unity had not been overcome.

3.2 Only in the communication dated 23 August 2006 did the Examining Division give detailed reasons why it considered that the claims did not to meet the requirements of unity.

In this communication it argued that the compounds of formula (Ia) to (Ic) only shared a structural element of the formula -C-C(O)-C(O)O- which was already disclosed in documents (D1), (D3) and (D9).

This argument does not apply to the claims of the present main request where the compounds claimed are limited to those of formula (Ia).

4. In summary, the claims of the Main Request meet the requirements of Article 123(2) EPC and the arguments raised by the Examining Division do not support its conclusion that the subject-matter of these claims lacked unity of invention. Therefore, the grounds for refusing the present application as set out in the decision under appeal do not prejudice the grant of a patent.

Hence, the decision under appeal is set aside.

5. Remittal

Appeal proceedings "are not and were never intended to be the mere continuation of first instance proceedings. Rather, their function is to give a judicial decision on the correctness of a separate earlier decision given by the first instance department." (T 34/90, point 2 of the reasons as published in OJ EPO 8/1992, 454).

The Examining Division has not yet assessed whether or not the subject-matter of the claims of the main request meets the requirements of novelty and inventive step. Therefore, the Board exercises its discretion under Article 111(2) EPC and remits the case to the department of first instance for further examination on the basis of these claims.

6. In view of the outcome of this decision, the Board sees no reason to deal with the auxiliary requests.

7. The Board observes that semicolons are missing in claim 1 of the main request on page 72 after the expression "A-X-" in the third line below formula (II) and in the first line of the definition of  $R_3$  to  $R_7$ .

**Order**

**For these reasons it is decided that:**

1. The decision under appeal is set aside.
  
2. The case is remitted to the department of first instance for further examination on the basis of claims 1 to 12 of the main request filed with the letter dated 28 June 2007.

The Registrar:

The Chairman:

C. Eickhoff

P. Ranguis