

EUROPEAN PATENT OFFICE  
U.S. PATENT AND TRADEMARK OFFICE

CPC NOTICE OF CHANGES 671

DATE: MAY 1, 2019

PROJECT RP0394

**The following classification changes will be effected by this Notice of Changes:**

| <u>Action</u>         | <u>Subclass</u> | <u>Group(s)</u> |
|-----------------------|-----------------|-----------------|
| <b>SCHEME:</b>        |                 |                 |
| Titles Changed:       | C23C            | 14/5826         |
| Warnings New:         | C23C            | 14/582, 14/5826 |
| <b>DEFINITIONS:</b>   |                 |                 |
| Definitions Modified: | C23C            | 14/00           |

**No other subclasses/groups are impacted by this Notice of Changes.**

**This Notice of Changes includes the following [Check the ones included]:**

1. CLASSIFICATION SCHEME CHANGES

- A. New, Modified or Deleted Group(s)
- B. New, Modified or Deleted Warning(s)
- C. New, Modified or Deleted Note(s)
- D. New, Modified or Deleted Guidance Heading(s)

2. DEFINITIONS

- A. New or Modified Definitions (Full definition template)
- B. Modified or Deleted Definitions (Definitions Quick Fix)

3.  REVISION CONCORDANCE LIST (RCL)

4.  CHANGES TO THE CPC-TO-IPC CONCORDANCE LIST (CICL)

5.  CHANGES TO THE CROSS-REFERENCE LIST (CRL)

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## 1. CLASSIFICATION SCHEME CHANGES

A. New, Modified or Deleted Group(s)

## SUBCLASS C23C 14/58 – After treatment

| <u>Type*</u> | <u>Symbol</u> | <u>Indent Level Number of dots (e.g. 0, 1, 2)</u> | <u>Title (new or modified)</u><br><u>“CPC only” text should normally be enclosed in {curly brackets}**</u> | <u>Transferred to#</u>  |
|--------------|---------------|---|--|-------------------------|
| U            | C23C 14/58    | 1   | After-treatment  |                         |
| U            | C23C 14/5806  | 2   | {Thermal treatment}  |                         |
| C            | C23C 14/5826  | 2   | {Treatment with charged particles (C23C14/582 takes precedence)}   | C23C14/5826, C23C14/582 |
| U            | C23C 14/5833  | 3   | {Ion beam bombardment}   |                         |

\*N = new entries where reclassification into entries is involved; C = entries with modified file scope where reclassification of documents from the entries is involved; Q = new entries which are firstly populated with documents via administrative transfers from deleted (D) entries. Afterwards, the transferred documents into the Q entry will either stay or be moved to more appropriate entries, as determined by intellectual reclassification; T = existing entries with enlarged file scope, which receive documents from C or D entries, e.g. when a limiting reference is removed from the entry title; M = entries with no change to the file scope (no reclassification); D = deleted entries; F = frozen entries will be deleted once reclassification of documents from the entries is completed; U = entries that are unchanged.

## NOTES:

- \*\*No {curly brackets} are used for titles in CPC only subclasses, e.g. C12Y, A23Y; 2000 series symbol titles of groups found at the end of schemes (orthogonal codes); or the Y section titles. The {curly brackets} are used for 2000 series symbol titles found interspersed throughout the main trunk schemes (breakdown codes).
- U groups: it is obligatory to display the required “anchor” symbol (U group), i.e. the entry immediately preceding a new group or an array of new groups to be created (in case new groups are not clearly subgroups of C-type groups). Always include the symbol, indent level and title of the U group in the table above.
- All entry types should be included in the scheme changes table above for better understanding of the overall scheme change picture. Symbol, indent level, and title are required for all types.
- “Transferred to” column must be completed for all C, D, F, and Q type entries. F groups will be deleted once reclassification is completed.
- When multiple symbols are included in the “Transferred to” column, avoid using ranges of symbols in order to be as precise as possible.
- For administrative transfer of documents, the following text should be used: “< administrative transfer to XX>”, “<administrative transfer to XX and YY simultaneously>”, or “<administrative transfer to XX, YY, ...and ZZ simultaneously>” when administrative transfer of the same documents is to more than one place.
- Administrative transfer to main trunk groups is assumed to be the source allocation type, unless otherwise indicated.
- Administrative transfer to 2000/Y series groups is assumed to be “additional information”.
- If needed, instructions for allocation type should be indicated within the angle brackets using the abbreviations “ADD” or “INV”: <administrative transfer to XX ADD>, <administrative transfer to XX INV>, or < administrative transfer to XX ADD, YY INV, ... and ZZ ADD simultaneously>.
- In certain situations, the “D” entries of 2000-series or Y-series groups may not require a destination (“Transferred to”) symbol, however it is required to specify “<no transfer>” in the “Transferred to” column for such cases.
- For finalisation projects, the deleted “F” symbols should have <no transfer> in the “Transferred to” column.
- For more details about the types of scheme change, see CPC Guide.

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B. New, Modified or Deleted Warning(s)

**SUBCLASS C23C 14/58 – After treatment**

| <u>Type*</u> | <u>Location</u> | <u>Old Warning notice</u> | <u>New/Modified Warning notice</u>   |
|--------------|-----------------|---------------------------|--|
| N            | C23C 14/582     |                           | Group C23C14/582 is incomplete pending reclassification of documents from group C23C14/5826. Groups C23C14/582 and C23C14/5826 should be considered in order to perform a complete search. |
| N            | C23C 14/5826    |                           | Group C23C14/5826 is impacted by reclassification into group C23C14/582. Groups C23C14/5826 and C23C14/582 should be considered in order to perform a complete search.                     |

\*N = new warning, M = modified warning, D = deleted warning

NOTE: The “Location” column only requires the symbol PRIOR to the location of the warning. No further directions such as “before” or “after” are required.

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2. B. DEFINITIONS QUICK FIX

| <u>Symbol</u> | <u>Location of change</u><br>(e.g., section title) | <u>Existing reference symbol or text</u>   | <u>Action; New symbol; New text</u>  |
|---------------|--|--|--|
| C23C<br>14/00 | Special rules of classification                    | <p>General considerations.</p> <p>CPC groups are given to well disclosed PVD (physical vapor deposition) coating methods.</p> <p>CPC groups are further given to related methods, such as pre-treatment of the substrate or after-treatment of the coating.</p> <p>CPC groups are further given to apparatus features important to the coating method, such as crucibles for the source material in PVD.</p> <p>Trivial references to well known PVD processes are not classified. As an example "...the SiO<sub>2</sub> layer was deposited by sputtering..." may be mentioned.</p> <p>In this subclass, an operation is considered as pre-treatment or after-treatment when it is specially adapted for, but quite distinct from, the coating process concerned and constitutes an independent operation.</p> <p>If an operation results in the formation of a permanent sub-layer or upper layer, it is considered as pre-treatment or after-treatment only if it has a direct impact on the layer above or below respectively.</p> <p>During classification in C23C 14/00 it is common that a document is vague about some of the subject-</p> | <p><b>Replace:</b> The existing text with the following.</p> <p>General considerations.</p> <p>CPC groups are given only as Invention symbols to well disclosed PVD (physical vapor deposition) coating methods.</p> <p>CPC groups are further given only as Invention symbols to related methods, such as pre-treatment of the substrate or after-treatment of the coating.</p> <p>CPC groups are further given only as Invention symbols to apparatus features important to the coating method, such as crucibles for the source material in PVD.</p> <p>Trivial references to well known PVD processes are not classified. As an example "...the SiO<sub>2</sub> layer was deposited by sputtering..." may be mentioned.</p> <p>In this subclass, an operation is considered as pre-treatment or after-treatment when it is specially adapted for, but quite distinct from, the coating process concerned and constitutes an independent operation.</p> <p>If an operation results in the formation of a permanent sub-layer or upper layer, it is considered as pre-treatment or after-treatment only if it has a direct impact on the layer above or below respectively.</p> <p>During classification in C23C 14/00 it is common that a document is vague about some of the subject-matter relating to PVD, making the classifier doubt if the document should be classified or not. The classifier should in these cases be guided by his/her own best judgement</p> |

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|  |  | <p>matter relating to PVD, making the classifier doubt if the document should be classified or not. The classifier should in these cases be guided by his/her own best judgement and the possible importance of the well disclosed subject-matter.</p> <p>Specific considerations related to specific parts of the classification scheme:</p> <p>Most of the groups in C23C 14/00 are self-explanatory. Below some explanation of non obvious aspects.</p> <p>C23C 14/0021-C23C 14/0031: Material in the gas phase is achieved by evaporation, laser ablation etc and reacted with another gas before or during the coating of the substrate. After-treatment with reactive gas in any form is classified in C23C 14/5846-C23C 14/5866.</p> <p>C23C 14/0036-C23C 14/0084: Material in the gas phase is achieved by sputtering and reacted with another gas before or during the coating of the substrate. After-treatment with reactive gas in any form is classified in C23C 14/5846-C23C 14/5866. Note that the sequential processes in C23C 14/0073 and L2 are not considered as after-treatments.</p> <p>C23C 14/024-C23C 14/027: The sub-layers are classified only if they have a direct relation to the PVD coating above. Examples are improvement of the adhesion or influence on the structure or properties of the PVD coating above.</p> <p>C23C 14/04-C23C 14/048: Deliberate action to avoid coating of</p> | <p>and the possible importance of the well disclosed subject-matter.</p> <p>Specific considerations related to specific parts of the classification scheme:</p> <p>Most of the groups in C23C 14/00 are self-explanatory. Below some explanation of non obvious aspects.</p> <p>C23C 14/0021-C23C 14/0031: Material in the gas phase is achieved by evaporation, laser ablation etc and reacted with another gas before or during the coating of the substrate. After-treatment with reactive gas in any form is classified in C23C 14/5846-C23C 14/5866.</p> <p>C23C 14/0036-C23C 14/0084: Material in the gas phase is achieved by sputtering and reacted with another gas before or during the coating of the substrate. After-treatment with reactive gas in any form is classified in C23C 14/5846-C23C 14/5866. Note that the sequential processes in C23C 14/0073 and C23C14/0078 are not considered as after-treatments.</p> <p>C23C 14/024-C23C 14/027: The sub-layers are classified only if they have a direct relation to the PVD coating above. Examples are improvement of the adhesion or influence on the structure or properties of the PVD coating above.</p> <p>C23C 14/04-C23C 14/048: Deliberate action to avoid coating of some areas of the substrate. Merely coating of the front side of a substrate directed towards a source of coating material and not coating the side that the substrate rests on is not classified.</p> <p>C23C 14/08-C23C 14/088: The alkaline earth, refractory and iron group metals are defined in IPC section C on one of the first pages. Mixed oxides from different groups are classified in C23C 14/08. Mixed oxides from one group is classified in that group. For example Al-Mg-O is classified in C23C 14/081 but Ti-Al-O is classified in C23C 14/08.</p> |
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|  |  | <p>some areas of the substrate. Merely coating of the front side of a substrate directed towards a source of coating material and not coating the side that the substrate rests on is not classified.</p> <p>C23C 14/08-C23C 14/088: The alkaline earth, refractory and iron group metals are defined in IPC section C on one of the first pages. Mixed oxides from different groups are classified in C23C 14/08. Mixed oxides from one group is classified in that group. For example Al-Mg-O is classified in C23C 14/081 but Ti-Al-O is classified in C23C 14/08.</p> <p>C23C 14/10: Note that these materials are usually based on Si-O, but other types of glass should also be classified here.</p> <p>C23C 14/22: Here, coating processes are classified that does not fit the groups C23C 14/221-C23C 14/48. Examples are processes based on a combinations of CVD and PVD and combinations of different PVD processes.</p> <p>C23C 14/24-C23C 14/32: Some ionization usually takes place during laser ablation (C23C 14/28) and electron beam induced evaporation (C23C 14/30). However, these documents are not classified in C23C 14/32 unless further ionization of the evaporated material takes place.</p> <p>C23C 14/34-C23C 14/46. In C23C 14/3407 it is particularly important to classify the method used for building up the target-backing plate unit. Remember that the features of the electrodes as such are classified in H01J 37/34.</p> | <p>C23C 14/10: Note that these materials are usually based on Si-O, but other types of glass should also be classified here.</p> <p>C23C 14/22: Here, coating processes are classified that does not fit the groups C23C 14/221-C23C 14/48. Examples are processes based on a combinations of CVD and PVD and combinations of different PVD processes.</p> <p>C23C 14/24-C23C 14/32: Some ionization usually takes place during laser ablation (C23C 14/28) and electron beam induced evaporation (C23C 14/30). However, these documents are not classified in C23C 14/32 unless further ionization of the evaporated material takes place.</p> <p>C23C 14/34-C23C 14/46. In C23C 14/3407 it is particularly important to classify the method used for building up the target-backing plate unit. Remember that the features of the electrodes as such are classified in H01J 37/34.</p> <p>Note further that sputtering may be performed with other particles than ions.</p> <p>A sputtering process is based on the use of the kinetic energy of a particle impacting a target surface releasing target material that is subsequently deposited on a substrate.</p> <p>C23C 14/56: Normal vacuum pumping is classified here. Deliberate minimization of impurities is classified in C23C 14/564.</p> <p>C23C 14/58-C23C 14/5893<br/>C23C 14/58 includes after deposition treatment of a coating or film deposited by the techniques of C23C 14/00.</p> <p>In C23C14/5826 any treatment with charged particles not being ion beam bombardment is included such as for example plasma treatment.</p> |
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|  |  | <p>Note further that sputtering may be performed with other particles than ions.</p> <p>A sputtering process is based on the use of the kinetic energy of a particle impacting a target surface releasing target material that is subsequently deposited on a substrate.</p> <p>C23C 14/56: Normal vacuum pumping is classified here.<br/>Deliberate minimization of impurities is classified in C23C 14/564.</p> |  |
|--|--|---|--|

NOTES:

- The table above is used for corrections or modifications to existing definitions, e.g. delete an entire definition or part thereof; propose new wording or modify wording of a section, change the symbol the definition is associated with, change or delete a reference symbol, etc.
- Do not delete (F) symbol definitions.

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3. REVISION CONCORDANCE LIST (RCL)

| <u>Type*</u> | <u>From CPC Symbol (existing)</u> | <u>To CPC Symbol(s)</u>   |
|--------------|-----------------------------------|---------------------------|
| C            | C23C 14/5826                      | C23C 14/5826, C23C 14/582 |

\* C = entries with modified file scope where reclassification of documents from the entries is involved; Q = new entries which are firstly populated with documents via administrative transfers from deleted (D) entries. Afterwards, the transferred documents into the Q entry will either stay or be moved to more appropriate entries, as determined by intellectual reclassification; D = deleted entries; F = frozen entries will be deleted once reclassification of documents from the entries is completed.

NOTES:

- Only C, D, F, and Q type entries are included in the table above.
- When multiple symbols are included in the “To” column, do not use ranges of symbols.
- For administrative transfer of documents, the following text should be used: “< administrative transfer to XX>”, “<administrative transfer to XX and YY simultaneously>”, or “<administrative transfer to XX, YY, ...and ZZ simultaneously>” when administrative transfer of the same documents is to more than one place.
- Administrative transfer to main trunk groups is assumed to be the source allocation type, unless otherwise indicated.
- Administrative transfer to 2000/Y series groups is assumed to be “additional information”.
- If needed, instructions for allocation type should be indicated within the angle brackets using the abbreviations “ADD” or “INV”: <administrative transfer to XX ADD>, <administrative transfer to XX INV>, or < administrative transfer to XX ADD, YY INV, ... and ZZ ADD simultaneously>.
- In certain situations, the “D” entries of 2000-series or Y-series groups may not require a destination (“To”) symbol, however it is required to specify “<no transfer>” in the “To” column for such cases.
- RCL is not needed for finalisation projects.