

CLASS 532, ORGANIC COMPOUNDS -- PART OF THE CLASS 532 - 570 SERIES

SECTION I - CLASS DEFINITION

Class 532 is the parent class for the Class 532 series of classes, the hierarchical arrangement of which is shown below in Lines With Other Classes And Within This Class.

Class 532 and its integral classes (i.e., the classes of the 532 series) embrace monomeric organic carbon compounds and polymeric organic carbon compounds that are not solid synthetic resins, natural rubbers, or hydrocarbons.

For a more complete description of the relationship of this class and its integral classes to the remainder of the United States Patent Classification System as it relates to chemical compounds and compositions classes, see Lines With Other Classes Within This Class.

SECTION II - LINES WITH OTHER CLASSES AND WITHIN THIS CLASS

A. HIERARCHICAL RELATIONSHIPS

The arrangement of Class 532 and its integral classes under the Class 260 umbrella, and its hierarchical relationship with classes therein, is as follows:

Class 260 Hierarchy

Class 260/1 (Miscellaneous Organic Carbon Compounds)

Class 518 (Fischer-Tropsch Processes)

Class 520/1 (Synthetic Resins & Natural Rubbers)

. Class 521 (Ion-Exchange Polymers, Cellular Products, Waste Polymer Recovery)

. Class 522 (Wave Energy Polymer Chemistry)

. Class 523/1 (Synthetic Resin Compositions with Non-reactant Material)

. . Class 524

. Class 525 (Chemically Treated Synthetic Resins, Compositions of Plural Synthetic Resins)

. Class 526 (Miscellaneous Processes, Synthetic Resins from Only Ethylenically Unsaturated Monomers)

. Class 527 (Synthetic Resins from Specified Natural Sources)

. Class 528 (Synthetic Resins from Plant Material of Unknown Constitution or Specified Reactant)

Class 530 (Natural Resins, Peptides, Proteins, Lignins)

Class 532 (No Patents Here at Present; Intended Future Residual Subclass After Abolition of Class 260)

. Class 534 (Radioactive or Rare Earth Metal Compounds, Azo and Diazo Compounds)

. Class 536 (Carbohydrates)

. Class 540/1 (Heterocyclic Carbon Compounds: Cyclopentanohydrophenanthrene Containing, Four-Membered Lactams, Porphyrins, Azaporphyrins, Nitrogen Hetero Rings with Seven or More Hetero Atoms)

. . Class 544 (Six-Membered Nitrogen Hetero Rings with Two or More Hetero Atoms)

. . Class 546 (Six-Membered Hetero Rings with One Ring Nitrogen)

. . Class 548 (Five-, Four-, or Three Membered Nitrogen Hetero Rings)

. . Class 549 (Oxygen or Sulfur Hetero Rings)

. Class 552 (Azides, Triphenylmethanes, Quinones, Hydroquinones, Steroids)

. Class 554 (Fats, Fatty Derivatives)

. Class 556 (Heavy Metal, Aluminum or Silicon Compounds)

. Class 558 (Esters)

. Class 560 (Esters, including Carboxylic)

. Class 562 (Acids, Acid Halides, Acid Anhydrides, Selenium & Tellurium Compounds)

. Class 564 (Amino Nitrogen Compounds)

. Class 568 (Boron, Phosphorus, Sulfur, or Oxygen Compounds)

. Class 260/665R (Carbon-Light Metal Compounds)

. Class 570 (Halogen Compounds)

Class 585 (Hydrocarbons)

B. REFERENCE TO CLASS 260 CLASS DEFINITION

The Class 260 class Definition is applicable, in almost all respects, to the subject matter of the Class 532 series of classes. The Class 260 class definition provides a comprehensive discussion of such topics as:

1. what constitutes an organic compound,
2. mixtures classifiable in compound subclasses,
3. patent placement rule,
4. genus-species relationships,
5. tautomeric forms,
6. intermediate - final product relationships, and other topics.

The Class 260 definition must be read to gain a complete understanding of the subject matter of Class 532 and its integral classes.

Class 532, at present, has only one subclass. This subclass has no patents. When reclassification of Class 260 is complete, and Class 260 no longer exists, this subclass will be the residual home for subject matter of the Class 532 series of classes.

C. MULTI-STEP SYNTHESIS CLAIMS

Many of the schedules in this Series of Classes provide process subclasses. These are indented under compound subclasses and embrace processes for the production of the compounds provided for in said compound subclasses.

The process subclasses are usually based on a type of reaction (such as "by hydrogenation") or on a type of starting material (such as "from nitro containing compound") or on a combination of the above (such as "by hydrogenation of nitro containing compound").

Many patents claim multistep processes. The problem of which step of a multistep process claim determines classification is resolved as follows: The word "directly" will be appropriately employed in the subclass title when the last step of forming the compound is to control. If "directly" does not appear in the title the step which determines classification may be prior to the final preparation step. Consider the following two claims.

Claim I - A method of making X by alkylating A to make B, isomerizing B to make C, and reducing C to make X.

Claim II - A method of making X by reducing A to make B, alkylating B to make C, and isomerizing C to make X.

which are to be placed in the following schedule:

- 1 . Compounds X
- 2 . . Prepared directly by reduction
- 3 . . Prepared by alkylation

Claim I is placed in subclass 2, because use of "directly" in a process claim means that the step involved results in directly obtaining the desired compound.

Claim II is placed in subclass 3. It is not placed in subclass 2 because, in claim II, the reduction step does not result in direct production of compound X, i.e., reduction is not the last step in making the compound. Subclass 3, which does not specify "directly", will take claim II because of the alkylating step.

This point is further illustrated by placement of claims I and II, supra, in the following schedule:

- 4 . Compounds X
- 5 . . Prepared by alkylation
- 6 . . Prepared directly by reduction

Claim I and Claim II must both be placed in subclass 5 since that subclass provides for alkylation irrespective of whether compound X is produced directly by the alkylation step or not. It would not be appropriate to classify the claims in subclass 6 because any process of making compound X which includes alkylation is provided for in subclass 5.

Purification or recovery steps would not effect classification in the above illustrations. Classification is determined by the controlling synthesis step.

D. SPECIAL RULES FOR CLASSIFYING SALTS

The rule to be utilized in classifying and cross referencing generic claims to salts in this series of Classes is clarified here. This rule applies only to salts and is not to be considered analogous to nor does it apply to other types of claimed disclosure.

A patent wherein the controlling claim is to a "compound" (e.g., acid or base) and wherein the claim includes a generic reference to salts, such as: "and the pharmacologically acceptable salt thereof", "or therapeutically useful acid addition salts thereof", "and non-toxic heterocyclic amine salts thereof", etc., will have its original classification determined by the "compound" without regard to the generic reference to the salts thereof. A patent in which the generic reference to salts is in a separate claim which is dependent on a claim to the "compound" is considered equivalent and will also have its original classification determined by the "compound" without regard to the generic reference to the salts thereof.

Cross-referencing of such a patent for a salt is mandatory only when it is clear that the specific salt was actually made as evidenced by: (a) a "working example" of a specific salt, (b) a property of a specific salt, such as its melting point, infrared scan, nuclear magnetic resonance, etc., or (c) an example of using a specific salt, such as in the treatment of animal life. Other cross referencing of salts, such as those which are part of a list in the disclosure, is optional and should be made only when clearly useful.

When a specific salt is set forth in a claim, the entire compound will be considered in determining the original classification, i.e., the original will be placed on the basis of the first appearing subclass providing for the acid, base, or salt. A specific salt is considered to be set forth in a claim when the structure of the salt forming moiety is clear from the claim or when the claim specifies that a heavy metal or a specific hetero ring (e.g., "and substituted morpholine containing salts thereof", etc.) is present in the salt forming moiety.

Other claims are treated the same as the controlling claim when considering where to cross reference, i.e., any generic reference to salts is disregarded as explained above.

E. CLASSIFYING COMPOUNDS OF UNKNOWN STRUCTURE WITHIN THIS SERIES OR CLASSES.

Classifying compounds of unknown structure in this Series of Classes is accomplished by considering two possible methods for classifying them and employing the one which results in the highest classification in the Series. The two methods are: 1. Classify according to an element or group of elements known to be part of the compound. 2. Classify based on an organic reactant utilized to make the compound.

When considering the first method, compounds are classified based on any partial structure of the compound which is known or which can be found by looking up a named compound in published sources. For example, if a specific alkaloid is named in a patent and if the structure or partial structure for that alkaloid can be found, the patent is classified according to that structure or partial structure. Patents claiming unnamed alkaloids in general have been classified in Class 546, subclass 1 on the assumption that alkaloids usually include a ring consisting of one nitrogen and five carbons.

Another situation involving unknown structures involves "oxidized hydrocarbon" in which there is no disclosure as to the structure of the products. These are placed in Class 568 in an indent under "oxygen containing". All that is known about them are the elements they contain. However, sulfurized carbohydrates of unknown structure are placed with carbohydrates based on the organic starting material. The "sulfur containing" subclasses are lower in the Series than carbohydrates in Class 568. Sulfurized nitro containing organic compounds are classified with "sulfur containing" because that is higher in the Class 568 schedule than "nitro containing".

Compounds which are disclosed as carbohydrates, proteins, lignins, starch, etc., and which are provided for according to titles of the Series are considered known structures, even though the exact structure isn't set forth in the patent. They will be classified as known compounds and will not be treated as compounds of unknown structure or undetermined constitution.

F. LINES BETWEEN COMPOSITION CLASSES AND THIS SERIES OF CLASSES

In general, the 532-570 Series of Classes takes mixtures of organic compounds only if the mixtures:

(A) result from a chemical process or synthesis wherein

