

Learning path for patent examiners

Unity of invention: chemical inventions: Entry level

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Introduction

This publication, "**Unity of invention: chemical inventions, Entry level**", is part of the "Learning path for patent examiners" series edited and published by the European Patent Academy. The series is intended for patent examiners at national patent offices who are taking part in training organised by the European Patent Office (EPO). It is also freely available to the public for independent learning.

Topics covered include novelty, inventive step, clarity, unity of invention, sufficiency of disclosure, amendments and search. Also addressed are patenting issues specific to certain technical fields:

- patentability exceptions and exclusions in biotechnology
- assessment of novelty, inventive step, clarity, sufficiency of disclosure and unity of invention for chemical inventions
- the patentability of computer-implemented inventions, business methods, game rules, mathematics and its applications, presentations of information, graphical user interfaces and programs for computers
- claim formulation for computer-implemented inventions

Each publication focuses on one topic at entry, intermediate or advanced level. The explanations and examples are based on the European Patent Convention, the Guidelines for Examination in the EPO and selected decisions of the EPO's boards of appeal. References are made to the Patent Cooperation Treaty and its Regulations whenever appropriate.

The series will be revised annually to ensure it remains up to date.

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All references to natural persons are to be understood as applying to all genders.

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Legal references

Art. 82 EPC, R. 44 EPC, GL F-V, 2; GL F-V, 3, CL Book II.B.5.3	6
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1. Learning objectives

Participants to this course will learn:

- That a set of claims must relate to one invention only or to a group of inventions that are linked to each other
- The concept of a "special technical feature", which is a link between a set of claims in order to consider them "one invention"
- For new chemical products, there typically is unity between a claim to the compound, its use and the process for making it.
- The "a priori" – "a posteriori" approach in assessing the unity between claims

2. Non-unity in chemistry

Article 82 EPC states: "The European application shall relate to one invention only or to a group of inventions so linked as to form a single general inventive concept."

This is further clarified in Rule 44 EPC, which states that the requirement of unity of invention is fulfilled only when there is a technical relationship among the inventions involving one or more of the same or corresponding technical features that define a contribution which each of the inventions, considered as a whole, makes over the prior art.

The inventions can be linked either through a new feature common to all the inventions or by a new way of solving the same or a corresponding problem. This "technical relationship" defining a contribution over the prior art is often referred to as the "**special technical feature**".

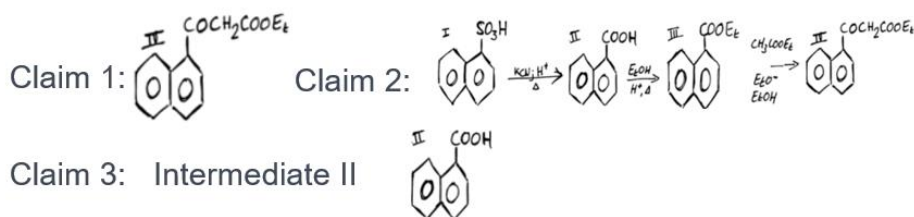
Consider the case of an application that has claims to a chemical compound, processes to make that chemical compound and a use of that chemical compound.

If the chemical compound is new, it brings the different claim categories together in a single invention as the new compound becomes the "special technical feature".

If, however, a chemical product is not new, there is no link between the compound, the process and the use claim. A process claim solves the problem of providing the product; a use claim solves the problem of providing a further use. The claims are not linked through a common technical feature (i.e. a new chemical formula) or linked by solving the same or a corresponding problem making a contribution over the prior art. In this second case, therefore, there is no unity.

Let us also look at the case of a new process to make a known chemical product "A" and means for carrying out the process. The chemical structure of "A" cannot be the unifying special technical feature since the chemical product is known (and thus not a contribution over the prior art). On the other hand, if the process to make this known chemical product "A" is new, the process claim can be combined with a claim to an apparatus or a "means for producing" the known compound because the process claim and the means for carrying out the process claim can be united by **solving the same or a corresponding problem**, namely **providing the known chemical product "A"**.

In the following case, there are *a priori* three inventions: (a) the compound (IV), (b) the process to make (IV) by converting (I) via (II) and (III) into (IV), and (c) the intermediate (II).



Let us assume that compound (IV) is novel over the prior art but **compound (III) is known**.

All three inventions share a characteristic, essential element (the naphthalene core).

However, there is no unity between the inventions as this common structural feature is known from the prior art (compound (III) is known in the prior art and also has the naphthalene core).

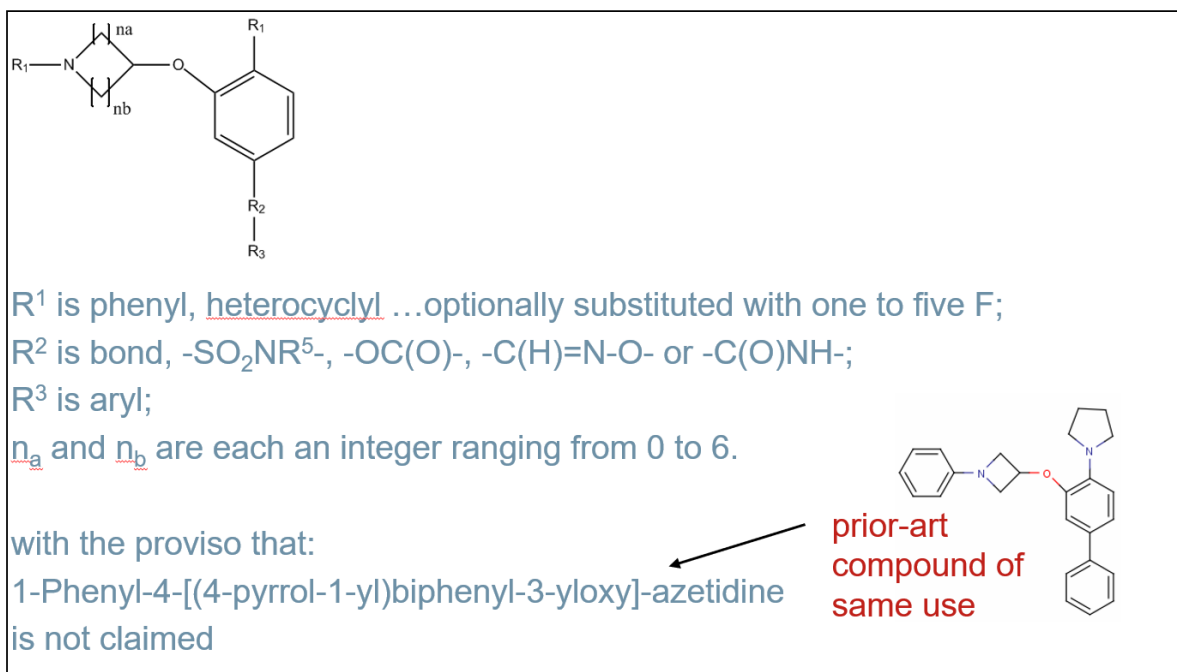
Claims 1 and 2 are unitary because they share the structural feature of compound (IV).

Even if formula (II) is new, claim 3 is non-unitary (with claims 1 and 2) since there is no common structural element that is novel over the prior art. Moreover, they solve different problems (claim 3 solves the problem of providing a suitable intermediate).

A posteriori (i.e. after analysing the facts, including those from a possible prior-art search), there are thus two inventions.

Examples

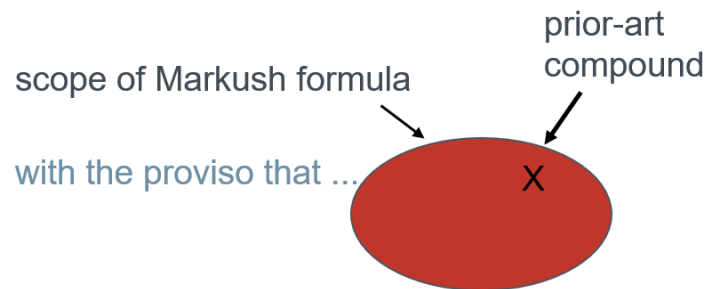
A Markush formula claim defines:



The Markush formula claim is non-unitary because the Markush formula (i.e. the structural feature uniting all the different alternatives, e.g. alternative I is that R^1 is Ph, alternative II is that R^1 is heterocycl, etc.) is not novel over a product for the same use.

Consequently:

- a. Although the claim may be novel (because the prior-art compound is disclaimed), the *Markush formula as such is not new* and cannot unite all the alternative embodiments represented by the Markush formula.
- b. All the alternatives covered by the Markush formula are not united by solving the same problem either, as the prior-art compound (falling under the Markush formula) is also known for the same use, i.e. for solving the same problem.



Legal references:

Art. 82 EPC, R. 44 EPC, GL F-V. 2; GL F-V. 3, CL Book II.B.5.3

3. Beyond the course

You can deepen what you have learned during this course with the following further readings:

- Tutorials "Non unity" with Entry, Intermediate, Advanced level;
- Presentation by Michael Olapinski, Pau Montes "Understanding and dealing with lack of unity", European Patent Academy, Search Matters 2018, Workshop WS08: https://e-courses.epo.org/pluginfile.php/22783/mod_resource/content/1/sm2018/page124198.html

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