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Learning path for patent examiners

Assessment of clarity: chemical inventions: Advanced level

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Introduction

This publication, "Assessment of clarity: chemical inventions, Advanced 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.

Contents

Legal references

1. Learning objectives

Participants to this course will learn:

- The importance of defining technical terms along the way the skilled person uses them;
- The concept of an "unusual parameter" in a claim and when it is allowable;
- Understand what "reach-through" claims are and why they generally have problems with sufficiency of disclosure and/or inventive step

2. Defining technical terms other than as commonly understood

Claims define inventions using technical terms, which are often explained and defined in the description. A clarity issue arises if the technical terms are defined contrary to the skilled person's common understanding.

Terms already having an established meaning **are not allowed to be used to mean something different** if this is likely to cause confusion. This is also the concept behind Rule 49(2) EPC.

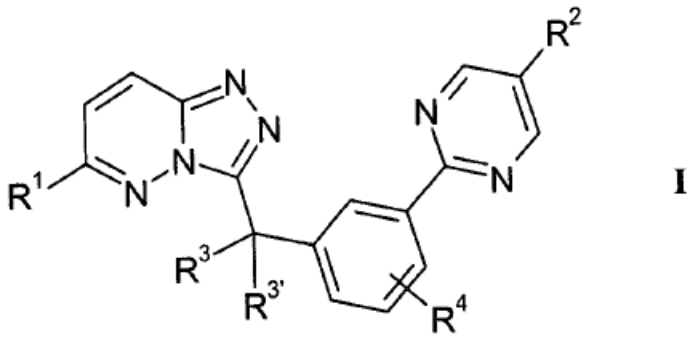
Rule 49 EPC specifies general provisions governing the presentation of the application documents, further explained in the Guidelines F-II 4.13 which generally conclude that

"Use should be made of the technical terms, formulae, signs and symbols generally accepted in the field in question."

The reasoning behind is that the skilled person reading the claims and construing the scope of protection would otherwise be misled.

Examples

A claim defines a Markush formula:



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The Markush formula uses IUPAC terms like "alkyl", "alkenyl" and "transition metal" to define the scope (e.g. "R^3 = alkyl").

The description defines "alkyl" as a "linear, branched or *cyclic hydrocarbon* of 1-20 carbon atoms comprising methyl, ethyl, propyl, butyl, sec-butyl, tert-butyl, cyclopropyl, cyclobutyl, cyclopentyl, *vinyl, alkynyl*, etc.".

When the description defines the scope of "alkyl" as also including "cycloalkyl" or as "fully or partially saturated linear or branched hydrocarbon radical", then this is contrary to the IUPAC definition of the technical term "alkyl".

Thus, a lack of clarity is created because the claims, when read in light of the description, give the skilled person a different impression compared with the conventional understanding.

Legal references:
Art. 84 EPC, R. 49(2) EPC, GL F-II, 4.11, GL F-II, 4.13, T 177/08, T 1981/15

3. Unusual parameters

"Unusual parameters" are parameters not commonly used in the field of the invention. They are "unusual" because:

a. the prior art usually uses another generally recognised parameter or
b. the prior art has not measured this parameter/property before

An unusual parameter of type (b) may be allowable if there is no difficulty in carrying out the measurement or applying it to a prior-art disclosure, i.e. it would be easy for the skilled person to establish if they are working inside or outside the scope of the claims and to assess novelty over prior-art disclosures.

Example of an *allowable* unusual parameter of type (b):

Claim 1: Sandpaper with an arrangement of strips with abrasive grain alternated with strips without abrasive grain, wherein the *parameter X* is the *relationship between the widths of the abrasive strips and the non-abrasive strips within a certain length of the sandpaper*.

The skilled person has no problem in establishing the exact meaning of the parameter, measuring it and establishing if it is a distinctive feature over the prior art.

There may be a hidden lack of novelty behind the use of "unusual" parameters in a claim.

Examples

Claim 1: *"Champagne characterised in that the bouquet index B has a value between 6 and 12."*

The "bouquet index B" is neither known in the technical field nor defined in the claim. The determination of this parameter is unclear.

A claim defined with this feature lacks clarity and sufficiency of disclosure.

Legal references:
Art. 84 EPC, Art. 54 EPC, GL F-IV, 4.11

4. Reach-through claims

"Reach-through" claims attempt to obtain protection for a chemical product/composition/use by *functionally defining the action of a product on a biological target*.

This claim format often occurs in relation to identifying a new target (receptor, enzyme, protein, biomarker, etc.) where the effect or usefulness is not fully understood.

The claims are called "reach-through" claims because they *reach out* (or "through") *to the future and into what yet needs to be discovered*. They try to protect now not only what has been discovered but also what may be discovered in future on the basis of the disclosure made in the patent.

These claims are prone to clarity objections as the borders of the claim are not well defined. They also lead to objections regarding sufficiency of disclosure as they reach out (or "through") to future inventions not disclosed.

Thus, when new chemical, biochemical or genetic targets or their receptors have been identified, it is often not yet known "what they are good for". "Reach-through claims" try to reserve what the new chemical/biochemical/genetic target/receptor might be good for in future.

However, this runs counter to the essence of the patenting system, namely a monopoly for actual disclosure. If an applicant cannot yet tell what an entity is good for (because these are future inventions), then there cannot be a monopoly for that entity either.

Chemical entities interacting with a newly discovered biological target are not new just because the biological target on which they act is new.

Examples of a reach-through claim (X was discovered):

- "An agonist/antagonist to polypeptide X for use in therapy" (agonist or antagonists are not yet discovered, or not **all** are discovered)
- "An agonist/antagonist identified by new screening method X for use in the treatment of disease Y" (even though some agonists might be disclosed, the scope embraces **all** agonists, i.e. undisclosed and undiscovered ones)

Examples

Example 1:

"Compounds for use as an HIV drug identified by the method of claim 1."

(Claim 1 defines an HIV assay.)

An assay was discovered to identify compounds active against HIV. Also generally claiming compounds identified by the test is a "reach-through" to future inventions.

Example 2:

> What is claimed is:
> Use of compounds having at least one carboxyl group and which are capable of stimulating soluble guanylatcyclase independently of the heme group in said enzyme, for the manufacture of a medicament for treating cardiovascular diseases

The discovery was that carboxyl-group-containing compounds stimulate a biological target (soluble guanylatcyclase). The claim amounts to patenting the use of not-yet-discovered compounds that interact with the target.

Legal references:
Art. 84 EPC, Art. 83 EPC, Art. 54 EPC, GL F-III, 9, GL G-VI, 8, CL Book II.C.6.5, T 1063/06

5. Beyond the course

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

- Andrew F. Christie, "Reach-through Patent Claims in Biotechnology: An Analysis of the Examination Practices of the United States, European and Japanese Patent Office", ResearchGate, October 2006, https://www.researchgate.net/publication/228191907
- Biotechnology Patent Practices: Reach Through Claims November 2001, Annex 2, Trilateral, https://www.trilateral.net/projects/biotechnology in combination with https://www.trilateral.net/sites/default/files/attachments/79eab11e-414a-42e2-b196-6157c40409a5/B3b_reachthrough_text.pdf

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