

What are CIPAC Code Numbers?

The CIPAC code number system is a simple approach for an unambiguous coding of active ingredients and variants used in the area/field of pesticides.

Below some details and clarifications are given. Starting with the history (initiation and development of the code system) and followed by an explanation of the current system incl. some explanations and examples.

The CIPAC coding system for pesticide active ingredients originates from the discussions at the 4th meeting of the FAO Working Party of Experts on the Official Control of Pesticides (Section B - Specifications) held in Rome in November 1968, when a classification system for specifications, methods of analysis and relevant papers was agreed. This system included the allocation of a code number to each active ingredient of distinctive structure.

The reason for the use of code numbers instead of common names was to avoid misinterpretation in cases where;

1) different common names had been approved by the different national standard organizations, 2) common names had been changed at some point for what reason ever and 3) the use of different spellings in different languages.

Where there were derivatives of a chemical with different common names (e.g. parathion and parathion-methyl; azinphos-methyl and azinphos-ethyl), a single code number was allocated, with the difference in the chemical indicated by the addition of a letter to the code number. For example, particular esters were indicated by an 'a' (methyl) or a 'b' (ethyl), thus parathion-methyl was **10.a** and parathion **10.b**.

Electronic data processing and the rules of ISO (ISO Standard 257, pesticides and other agrochemicals - Principles for the selection of common names) made it necessary to amend the coding system. Thus with the publication of CIPAC Handbook E in 1993, several code numbers had to be changed. Parathion received the code 10, parathion-methyl 487, azinphos-methyl 37, azinphos-ethyl 485 and lindane (γ -HCH) was changed from 4 γ to 488, etc.

It was necessary to also change the extension codes to a 3-digit numerical code and to adopt ISO names for ions and radicals (ISO 257). At present, CIPAC codes are also allocated to active ingredients where there is no intention to prepare analytical methods. e.g: 618, Zucchini Yellow Mosaic Virus (ZYMV mild strain) and bacteria. In October 2003 the list comprised some 770 compounds. A CIPAC code can be allocated as soon as a ISO common name for a certain compound has been accepted.

CIPAC analytical methods for pesticides are referred to using the code of the compound. For example, the method for cymoxanil water dispersible granules (WG), is referred to as 419/WG/M, as the CIPAC code for cymoxanil is 419.

At the moment beside CIPAC, FAO, WHO and the EU make use of the CIPAC code system.

There are some principles, which should be considered for the allocation of CIPAC numbers:

- Generally speaking, a CIPAC code number can be allocated as soon as an ISO common name for a certain compound has been accepted (ISO/TK 81 – Common names for pesticides and other agrochemicals). However, this should not be regarded as a cut-off criterion. There are cases, where a CIPAC code number will be allocated, albeit no ISO common name is accepted at this stage or will not be allocated according to the ISO rules (ISO/FDIS 257:2004) or was not allocated from different reasons in the past.
The first case is applicable, if a collaborative trial is conducted before an ISO common name is assigned. The second applies for example for substances where its chemical name is reasonably short and distinctive [e.g. arsenic(III)oxide, formic acid or 1,3-dichloropropene] and the latter for substances such as ethephon or bioallethrin.
- In general the allocation of CIPAC number will follow the allocation of ISO common names (see example below). However, deviations will be made in the CIPAC code system, where necessary (e.g. ISO name phenothrin for the isomeric mixture and CIPAC numbers 356 for phenothrin and 777 for *d*-phenothrin).
- CIPAC numbers will be allocated in general only to active ingredients which are regarded as "new" within the EU. Numbers for other substances will only be assigned, if a collaborative trial is likely, i.e. at the moment no CIPAC number for acetic acid, ethanol, gelatine or bone oil). However, a CIPAC number will be allocated also for such compounds in justified cases.
- CIPAC numbers have been and will be allocated also for micro-organisms. A differentiation in active ingredient and variant is not foreseen (e.g. a strain as a variant of a species). The number will be assigned to the individual strains, i.e. CIPAC no. 661 for *Bacillus subtilis* strain QST 713 and not for *Bacillus subtilis*.
- Multiple counter-ions and multiple esters will be listed in the respective anion-, cation or ester sub-group.

The current code system contains 7 subgroups to cover variants of the active ingredients (e.g. salts and esters). In detail, the single groups are:

Inorganic cations	(digit extension 0xx),
Organic cations	(1xx),
Ester radicals	(2xx),
Inorganic anions	(3xx),
Organic anions – acid radicals	(4xx),
Ester radicals/salts	(5xx) and
Other	(6xx).

The last sub-group was recently installed to cover variants such as hydrochloride and oxychloride which do not fit into the existing groups. This new group gives sufficient flexibility to cover all kinds of variants, while at the same time not altering the structure of the existing system.

In the following some examples are given to clarify the use of the extension code system:

Compound	Number	Explanation
Fluroxypyr	431	
Fluroxypyr-butometyl	431.221	
Fluroxypyr-meptyl	431.214	
Glyphosate	284	
Glyphosate-sodium	284.011	
Glyphosate-potassium	284.019	
Glyphosate-isopropylammonium	284.105	
Glyphosate-trimesium	284.114	
Metsulfuron	441	ISO name
Metsulfuron-methyl	441.201	as a variant of metsulfuron
<i>but</i>		
Tolclofos-methyl	479	ISO name, and not 479.201 as a variant