

Biocidal products should be used with caution

The Ministry of Ecology is currently considering which biocidal products should no longer be available for self-service sales to non-professional users. ANSES has been helping by analysing data from poison control centres over the period 2015-2019. It identified 51 serious accidents caused by biocidal products, including 12 deaths. Most of these accidents were due to surface disinfectants. The cause was often a lack of awareness of the risk or the decanting of these products into another container.



What is a biocide?

What do surface disinfectants, insecticides and construction material preservatives have in common? They all belong to the category of **biocidal products**. They are classified by product type, "PT", according to their uses. There are 22 PTs¹, divided into four groups: disinfectants (PT1 to 5); preservatives, such as for wood (PT6 to 13); pest control products (PT14 to 20) and other biocidal products (PT21 and 22).

Etymologically, the term means "destruction of living things" ("*bio-*" = *living*, "*-cide*" = *that kills*). In a broader sense, a biocide is a product intended to destroy, deter or render harmless a harmful organism by any means other than simple physical or mechanical action. Biocidal products and the active substances they contain are covered by a European regulation governing their marketing and use (Regulation (EU) No 528/2012). Its main objective is to ensure a high level of protection for humans, animals and the environment by only placing on the market those biocidal products that are effective and do not present unacceptable risks relative to their benefits. Some of these are sold freely to private individuals, while others are reserved for professional use (more concentrated products, for example).

What types of access to biocidal products should be restricted?

In 2018, three measures were added to the French Environmental Code² to better prevent and reduce exposure of the population and the environment to biocidal products.

The advertising of certain biocides is therefore now prohibited and promotional offers³ are no longer authorised.

The third measure introduces a ban on self-service sales to non-professional users: sales will have to take place through an intermediary, who will provide advice and recommendations on the precautions to be taken.

This includes products for which emerging pest resistance is known or suspected, those for which cases of unintentional poisoning have been reported, and products that are frequently "misused" (i.e. in disregard of the rules to protect human health or the environment, as stated in their marketing authorisation or in the package leaflet prepared by the manufacturer).

ANSES was asked to make recommendations on which products should be concerned by this third measure. In order to draw up its proposal, the Agency relied in particular on an analysis of data from poison control centres, to identify biocidal products that had caused poisoning in humans.

The analysis focused on cases of serious poisoning and death registered between 2015 and 2019, where the causality of a biocidal product was at least "likely". One hundred and twenty-five cases were recorded, including 109 serious cases and 16 deaths. Forty per cent were accidental and involved private individuals (n=51, 39 serious cases and 12 deaths) (see Table 1).

1. The PTs are defined in Regulation (EU) No 528/2012.

2. EGALIM Act No. 2018-938 of 30 October 2018 on the balance of commercial relations in the agricultural and food sector and healthy, sustainable and accessible food for all – Article 76.

3. Discounts, rebates, reductions, differentiation of general and specific conditions of sale within the meaning of Article L. 441-6 of the French Commercial Code, or the giving of free units and all equivalent practices are prohibited.

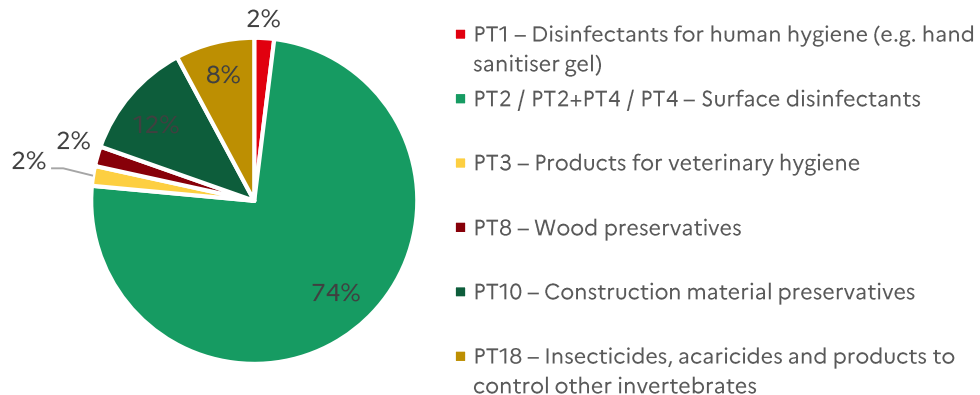


Figure 1: Number of cases of high severity poisonings or accidental deaths with biocidal products recorded by Poison Control Centers (2015-2019) by PT. (source: SICAP)

Occupational accidents (19 serious cases), deliberate poisoning (50 serious cases and 4 deaths), and one case where the circumstances were not determined are not addressed in the remainder of this article.

Surface disinfectants responsible most of the time

In almost three quarters of cases, the accidental poisonings (outside occupational settings) involved a surface disinfectant (Figure 1). This product category caused all 12 deaths.

Surface disinfectants are the most common biocidal products on the market, in terms of both the number of different products and the quantities sold.

Accidents mainly due to a lack of awareness of the risk

Two broad categories of accidental poisoning circumstances warrant attention, as they are easily avoidable:

- accidents involving young children and elderly people with cognitive disorders who are unable to see the risk (a circumstance known as "risk perception failure"), or following decanting of the product into a container other than the original one, generally a food container (water or soft drink bottle), which then leads to accidental ingestion.

These circumstances accounted for 33 cases or 65% of accidental poisonings. The vast majority involved oral exposure. The 12 accidental deaths all occurred in these circumstances (11 due to a risk perception failure and one due to decanting), in people over 70 years of age who were mainly residents in nursing homes.

The products used in nursing homes may be designed for professional use. These products are generally more concentrated than domestic biocides.

It was therefore probably a combination of these two factors that led to these deaths: more dangerous professional products made easily accessible to vulnerable individuals, who may have ingested the products in large quantities due to cognitive disorders.

- DIY or domestic accidents, or due to swimming pool maintenance. These circumstances accounted for 18 poisoning cases, or 35%. These accidents are particularly interesting with regard to the issue of restricting self-service sales to the general public, because the individuals involved knew they were using a biocidal product but may not have been aware of the hazard or the conditions of use (advice at the time of sale could rectify this).

The majority of people were exposed by the respiratory route. Some accidents had occurred with chlorine-based products for disinfecting swimming pool water, as inhalation exposure when opening the container can cause respiratory tract irritation. There was already a warning about this in a previous Vigil'ANSES article [1].

Avoidable accidents

These results are a reminder of the importance of storing biocidal products – and more generally all hazardous products – out of the reach of children and adults with cognitive impairment, especially products used for cleaning surfaces in medico-social establishments.

Table 1: Number of high severity poisoning cases and accidental deaths with biocidal products recorded by Poison Control Centers (2015-2019) according to the exposure circumstance. (source: SICAP)

	Accident circumstances	Number of cases	%	%
1	Risk perception failure (related accident)	18	35	65
	Decanting (related accident)	15	29	
2	DIY/domestic	12	24	35
	Other accident	6	18	
	Total	51	100	100

The practice of decanting should be avoided, regardless of the product, as it is responsible for many potentially fatal accidents.

Lastly, a ban on self-service access to certain biocidal products for the general public could help raise awareness of the danger posed by these products, by emphasising that they should only be used when necessary and strictly in accordance with the recommended conditions of use (compliance with doses, use in a ventilated space, etc.). This could potentially reduce poisoning cases.

The results of this study were taken into account to establish criteria for identifying product categories or products for which a ban on self-service access for private individuals would be appropriate.

Gaëlle CREUSAT (Nancy poison control centre), Rachel PAGES (ANSES)

References

[1] https://vigilances.anses.fr/sites/default/files/VigilAnsesN9_Novembre2019_Vigilanceintrantsvegetal_Chlore.pdf

TO FIND OUT MORE:

ANSES TOXICOVIGILANCE REPORT on the study of serious cases associated with biocidal products – Retrospective study of observations recorded by the French poison control and toxicovigilance centres from 1 January 2015 to 31 December 2019:

<https://www.anses.fr/fr/content/rapport-toxicovigilance-2020-sa-0008>

ANSES OPINION on the ban on self-service sales of certain categories of biocidal products: <https://www.anses.fr/fr/content/avis-2020-sa-0008>