



Biocides Questions & Answers

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Industry briefing/trade media related

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Definitions

INDUSTRY BRIEFING/TRADE MEDIA RELATED

1. *What is a Maximum Residue Level?*

The Maximum Residue Level for any plant protection product is based on its application in accordance with label instructions and Good Agricultural Practice. The MRL is a trading standard, and not a safety limit. However, it is an offence to sell or supply any food with a residue over any established MRL. The presence of residues at levels above a set MRL does not indicate that there is any risk to human health, which is quantified by the Acute Reference Dose.

2. *What is an Acute Reference Dose?*

The Acute Reference Dose is the amount of a substance that can be eaten without an appreciable health risk to the consumer over a short period of time, usually during one meal or one day. The risk from long-term exposure to pesticide residues in food is assessed as part of the approval process. The Acceptable Daily Intake (ADI) is the amount of a pesticide that can be eaten every day of your life in the practical certainty, on the basis of all known facts, that no harm will result. A safety margin of over one hundred is built into the ADI to take into account the potential for greater sensitivity among humans.

3. *What is the Limit of Detection?*

Techniques can detect traces of biocides at extremely low levels. Chemists call the lowest level that can be measured reliably the Limit of Detection or Limit of Determination.

4. *Why are some biocides coming under the same regulation as crop protection products?*

A number of biocides have, or have had historically, a dual use as a pesticide. EC Regulation 396/2005 stipulates that Maximum Residues Levels for substances that come within the definition of pesticides also apply to substances being used as biocides. As such, these MRLs when set apply to residues from any source, including biocidal use, environmental contamination and naturally occurring background levels. MRLs apply to the food at any point from the production of its raw materials to the final product.

A limited number of biocides come within the definition of Plant Protection Products (PPP) and as a result have MRLs set under Regulation 396/2005. For the substances concerned the MRLs that apply may be set at a default level of 0.01 mg/kg (the Limit of Determination or LOD) because data that are required to establish higher substance MRLs have not been submitted or evaluated.

5. *Who regulates the use of biocides in the food supply chain?*

The European Union provides a European framework and harmonised regulation to ensure that risks are assessed properly before biocidal products are placed on the market. The European Chemicals Agency (ECHA) provides technical and scientific assistance and manages the review of biocidal active substances.

6. *What is happening with regard to the EU regulation of biocides and what is the food and drink industry's position?*

The European Commission is looking at the level of certain biocidal active substances in foodstuffs as part of a review of all biocides currently permitted for use in food and feed under the EC Biocides Products Regulation. The UK food industry believes that a proportionate, risk-based approach to setting Maximum Levels should be taken which takes into account the absolute need to protect consumer safety and comply with food hygiene law whilst allowing industry to retain the use of a range of biocides throughout the supply chain to reduce microbiological contamination.

7. *Who decides which MRLs to set?*

The EU Standing Committee made up of representatives of each EU Member States' authorities determine the MRLs to be set for plant protection products, based on recommendations from the European Food Safety Authority (EFSA) and residues data provided to the European Commission.

8. *Why is the European Commission reviewing the MRLs for chlorates? What is the procedure?*

Chlorate is no longer approved for use as a pesticide, yet it comes under the definition of a plant protection product and therefore a MRL applies of 0.01 mg/kg. Previously the European Commission proposed the introduction of temporary MRLs, however the proposal was not agreed by all EU Member States. In the meantime, a default MRL of 0.01 mg/kg remains in place for an unlimited time. However, it was recognised that the default MRL did not take account of water treatment and biocidal uses. It was agreed that in the interim individual Member States would make their own decisions on any action.

The European Commission is expected to consult on proposed MRLs in spring 2016. We await details of the proposals and the schedule for a public consultation and vote by the EU Standing Committee.

9. *Do other EU Member States have similar issues with the setting of MRLs for biocides?*

The UK food industry believes that there are similar issues for other EU Member States. There are some difference in terms of the types of biocides being used across EU Member States and the chlorination of drinking water. However, chlorates have been shown to be present in drinking water and other water used in food production in other Member States. The level of awareness of the widespread use of biocides in the food industry and the impact of reducing the availability of biocides does appear to be variable across EU Member States currently.

EU Member States use different hypochlorite concentrations in drinking water, and many countries are divided into regions served by different suppliers. Therefore the concentration of hypochlorite added to drinking water can vary.

10. Why does the food industry want to keep a range of products available as biocides?

There is an increased risk of microbiological contamination if the food and drink industry does not have adequate disinfection and cleaning products. There is a need to balance the low risk of residues of biocides to human health with the potential risk of increased levels of microbiological contamination.

11. What does the UK industry want in terms of action from the Commission/UK authorities?

There is a need to balance the potential low risk from residues to human health from biocides with the potential risk of increased levels of microbiological contamination.

The industry is seeking a proportionate, risk based approach to setting limits for chlorates which takes into account the need to protect consumer safety whilst allowing industry to retain the use of chlorine based agents to reduce microbiological contamination.

A limit set at the limit of detection is impractical, in particular with regard to the extensive use of chlorinated drinking (mains) water for irrigation, washing and transportation of products.

12. What is the position regarding the safety of chlorate in drinking water?

Drinking water is used extensively throughout the food supply chain. No MRLs have been set for chlorate in drinking water in the EU and the World Health Organization has established a voluntary guideline level for chlorate in drinking water of 0.7 mg/L.

According to the UK's Drinking Water Inspectorate, typically water companies keep the level of residual disinfectant in the form of free or combined chlorine to 0.5 mg/l or less.

The Drinking Water Inspectorate states '*Water is safe when it leaves the treatment works and the trace of chlorine is there only to preserve the high quality of water as it passes through the miles of pipes used to convey water to homes and workplaces. Chlorine has a long history of about 100 years of safe use for hygiene purposes worldwide.*'

13. What is the UK industry doing to ensure that its use of biocides is appropriate?

Biocides companies provide guidance to users of their products. As the food industry we are working with biocides companies, food producers from primary production to added value to help food businesses work in compliance with biocides usage guidance. We are also generating data to demonstrate any compliance issues with proposed biocide levels and to continue to assure food hygiene and safety.

CONSUMERS

a) What is a biocide?

A biocide is a chemical substance or micro-organism intended to destroy, deter, render harmless, or exert a controlling effect on any harmful organism by chemical or biological means.

b) Why are they used on food and in food production?

Biocides are used to destroy, deter, render harmless, or exert a controlling effect on any harmful organism. Their use throughout the supply chain helps to maintain high standards of food hygiene.

c) What controls are in place to check these products are safe to the consumer?

Biocides have to be approved for use in specific categories, for example, coming into contact with foodstuffs or for addition to foodstuffs.

d) Are residues of cleaning agent products harmful to eat?

No. Levels are taken into account when biocides are approved for use.

e) Are there alternative ways of controlling microbes? Are they as effective?

Biocides are regulated and manufactured specifically to help control harmful organisms. The food industry seeks to prevent contamination by applying Good Agricultural Practice, Good Hygienic Practice and HACCP (a management system in which food safety is addressed through the analysis and control of biological, chemical, and physical hazards from raw material production, procurement and handling, to manufacturing, distribution and consumption of the finished product).

f) What is the risk of getting ill from microbes in our food if we don't use biocides?

The safety of food is paramount to the food industry. Food poisoning outbreaks are rare in the UK, which has, for example, consistently lower levels of listeriosis compared with other European countries. The food industry is committed to maintaining food safety and hygiene.

g) Is there a cumulative effect from the use of these products?

The regulatory authorities take into account any potential for accumulation of residues when setting the Acute Reference Dose to ensure that safety margins are maintained.

h) Are food hygiene standards the same for food and drink products sourced overseas compared to those produced in the UK?

Food safety is paramount to the UK industry and high standards apply to all food which is sold in the UK. It is a regulatory requirement for all food business operators to provide food which is safe to eat, irrespective of its origin and to clean the food production environment, disinfecting food contact surfaces to avoid any risk of contamination.

i) Aren't these the same kind of products we use in the home? What's the difference?

It's the same chemical that is used in businesses as in home use products - chlorine is actually the most widely used disinfectant in the home. It is found in effective disinfection products such as bleach and household brands such as Milton, Mr Muscle, Flash and Domestos. It is also used in very low levels in drinking (mains) water to ensure safety. It is recommended that at home householders use these disinfectants when cleaning up after preparing raw meat, poultry, fish and unwashed vegetables or fruit to kill potentially harmful bacteria such as *Campylobacter*, *E. coli* and *Listeria*. Warm water and soap will not be as effective and could even allow surviving microbes to remain on cleaning cloths, and be disseminated around the kitchen, which is why targeted use of disinfectants at key times and spaces is recommended by the IFH. (<http://www.ifh-homehygiene.org>). When members of the family are ill, products containing chlorine can be used to clean surfaces and even can be added to laundry to kill harmful bacteria and viruses.

j) What can consumers do to help protect themselves from food poisoning?

Once food is delivered safely to the supermarket, consumers also need to take responsibility from this point onwards for food safety. Getting food home quickly or in cool bags will help to reduce risks of bacteria multiplying en-route. Even packing food to avoid potential cross-contamination from raw foods to ready-to-eat foods and keeping hot foods such as rotisserie chickens away from cold foods can be an important way of ensuring food safety. Storing food correctly in the fridge (below 5°C and putting raw meats on the bottom shelf away from ready-to-eat foods such as ham) is important. Cooking meats to above 75°C in the centre of the food will destroy harmful pathogens, whilst cleaning and disinfection of surfaces is also essential, particularly after preparing raw meat, poultry, fish and unwashed vegetables or fruit. Hands should be thoroughly washed with soap and water after handling raw foods and before handling ready to eat foods. Cleaning cloths must be disinfected either by boiling or immersion in bleach disinfectant and dried after use around raw foods. In kitchens where there are a number of users (large families, student accommodation etc) then it is wise to disinfect a surface before preparing ready-to-eat food as you don't know what may have been on the surface previously (raw foods, football boots etc). Finally, following the use by dates is an essential means of protection, particularly against *Listeria*.

k) Are some members of the population more susceptible to food poisoning than others?

Yes, there are many groups who may be more likely to become ill, or who may suffer more severe symptoms if they are ill with food poisoning. They are often termed "vulnerable groups". For example, *Listeria monocytogenes* can cause miscarriage in pregnant women and can lead to death, particularly for those over the age of 60. *E. coli* affects young people (under the age of 7) and those over the age of 60 more severely. However, there are also other groups for whom a dose of food poisoning may be dangerous; those with diabetes, people using gastric acid inhibitors, alcoholics, immunocompromised people, cancer chemotherapy patients, patients having immunosuppressive or cytotoxic treatments. In fact if you add up how many people fall into the category, it is close to half the population. The worrying thing is that some people may not know that they belong to these groups (for example early pregnancy, undiagnosed illnesses).

l) Should I wash some products to remove any traces of cleaning agents before eating them?

You should always follow the instructions/recommendations on the product pack in preparing food in the home.

m) Is it safe to clean my product in tap water if the water is chlorinated?

Yes, depending on the product and the recommendations on the pack, for example, pre-washed bagged salads do not require further washing before use. Chlorine is the most widely used disinfectant in the home and is used in very low levels in drinking water (source: Drinking Water Inspectorate).

Definitions

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| Biocide: | A chemical substance or microorganism intended to destroy, deter, render harmless, or exert a controlling effect on any harmful organism by chemical or biological means. |
| Cleaning: | The removal of food residues, dirt, grease and other undesirable matter. This requires physical energy, heat and/or chemicals (detergents). Cleaning only removes dirt from the surface but does not kill all bacteria. |
| Detergent: | A chemical used to remove grease, dirt and food, such as washing-up liquid. |
| Disinfectant: | A chemical that reduces bacterial numbers to safe levels. |
| Disinfection: | The reduction of the number of microorganisms in the environment, to a level that does not compromise food safety or suitability. |
| Ready to eat food: | Food that does not require any further process to make it safe to eat, for example cooked meats, cheeses, yoghurts. |
| Sanitiser: | Chemicals that acts as both detergent and disinfectant. |