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# DECISION

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15 September 2020

## Summary

Substance	Chlorpyrifos and chlorpyrifos-methyl
Application code	APP204032
Application type	To decide whether there are grounds for reassessment under the Hazardous Substances and New Organisms (HSNO) Act 1996 (“the Act”)
Applicant	Environmental Protection Authority
Purpose of the application	Grounds to reassess chlorpyrifos, chlorpyrifos-methyl, and substances containing them
Date application received	19 June 2020
Consideration Date	15 September 2020
Considered by	A Decision-making Committee of the Environmental Protection Authority (“EPA”)
Decision	Grounds exist for the reassessment of chlorpyrifos and chlorpyrifos-methyl

## 1. Background

- 1.1. Chlorpyrifos and chlorpyrifos-methyl were approved under the Act on 1 July 2006 via the Hazardous Substances (Chemicals) Transfer Notice.
- 1.2. Substances containing these two active ingredients were approved under the Act on 1 July 2004 via the Hazardous Substances (Pesticides) Transfer Notice 2004. Additional chlorpyrifos-containing substances were subsequently approved under sections 28A and 29 of the Act.
- 1.3. The substances containing chlorpyrifos and chlorpyrifos-methyl were evaluated as part of the 2013 organophosphate and carbamates reassessment. Following the reassessment, chlorpyrifos-containing substances continued to be approved, though a number of controls were altered; the classification of chlorpyrifos-methyl substances was updated also. The decision in the 2013 reassessment has been amended (using s 67A of the Act) twice. It was modified via a further reassessment (using s 63A) in 2015 to update the wording of the bee control.
- 1.4. In a second reassessment in 2016, several substances containing chlorpyrifos used for non-plant protection uses, such as veterinary medicines and in urban pest management, were revoked (that is, their approvals were declined) because it was considered they were not being used in New Zealand at that time.
- 1.5. Details of the indicative substances included in this decision are provided in the Appendix.
- 1.6. The applicant has applied for grounds to reassess chlorpyrifos and chlorpyrifos-methyl in order for new information on the effects of these active ingredients, and therefore the substances that contain them, to be considered.
- 1.7. The purpose of this application is to decide whether there are grounds for the reassessment of the substance.

## 2. Application process

- 2.1. The application was formally received by the EPA on 19 June 2020 and the information supplied evaluated by EPA staff.
- 2.2. The application was considered on 9 - 15 September 2020 by a Decision-making Committee ("the Committee") of the EPA.

## 3. Evaluation against the criteria in the Act

- 3.1. The Act specifies a number of factors that the EPA has to take into account when considering whether grounds exist for a reassessment. At least one of these factors must be present before the EPA can use its discretion to determine whether there are grounds for a reassessment.

### **Significant new information relating to the effects of the substances has become available (section 62(2)(a))**

#### ***Chlorpyrifos***

- 3.2. The applicant has provided information about the effects of chlorpyrifos and chlorpyrifos-containing substances, and decisions by overseas agencies to restrict or prohibit these substances based on their effects.

- 3.3. The information is contained in the following reports, referenced by the applicant:
- Australian Pesticide and Veterinary Medicines Authority (APVMA) regulatory decision (Special Gazette 25092019)
  - Das *et al.*, 2020, Fate of the organophosphate insecticide, chlorpyrifos, in leaves, soil, and air following application
  - European Commission decision (Official Journal of the European Union, L7/14)
  - European Food Standard Agency (EFSA) human health risk assessment (EFSA Journal 2014;12(4):3640)
  - Hageman *et al.*, 2019, Current-use pesticides in New Zealand streams: Comparing results from grab samples and three types of passive samplers
  - Pest Management Regulatory Authority (PMRA, part of Health Canada) updated environmental risk assessment (PRVD2019-05)
  - United States Environmental Protection Agency (US EPA) spray drift mitigation decision (0591010)
  - US EPA revised human health risk assessment (EPA-HQ-OPP-2015-0653-0454).
- 3.4. The US EPA had concerns regarding the risks of chlorpyrifos to users and bystanders. They introduced buffer zones to manage the risks to children and other bystanders as an interim measure.
- 3.5. The EFSA risk assessment for chlorpyrifos identified an acceptable operator exposure level (AOEL) that is an order of magnitude lower than that used by the EPA in their previous assessments. They considered the resulting risks to workers going back in to treated fields and orchards to be a concern. The European Commission did not renew the approval for chlorpyrifos because of these concerns, its genotoxic potential, and that it could be classified as toxic for reproduction (equivalent to the HSNO classification 6.8A, which has not been applied to chlorpyrifos in New Zealand).
- 3.6. The APVMA had concerns regarding serious neurodevelopment and neuro-behavioural toxicity of chlorpyrifos. The acceptable daily intake (ADI) value they used was an order of magnitude lower than the AOEL previously used by the EPA. The APVMA consequently cancelled all domestic and home uses of chlorpyrifos-containing substances.
- 3.7. The PMRA, in an assessment out for consultation, considered that the risks to beneficial insects, birds, mammals, and aquatic organisms were not acceptable; and proposed cancelling most existing uses of chlorpyrifos.
- 3.8. Hageman et al and Das et al have published the results of surface water monitoring studies that identified the presence of chlorpyrifos in New Zealand streams and in air and soil following application.
- 3.9. The Committee considered that, overall, the information provided is “significant” because it provides justification for revising the hazard classification and risk assessment, and accordingly the controls on the substances.
- 3.10. As the papers by Das et al and Hageman et al had not been reviewed in detail by the applicant, the Committee considered that these were not significant, though would support the evaluation of any future reassessment application.
- 3.11. The Committee also noted that the information supplied was published between 2016 and 2020 (with the exception of the 2012 US EPA spray drift mitigation decision), and was therefore not available during the initial approval, or previous reassessments, of the substances. Therefore the Committee considered these to be “new” information.

3.12. The US EPA spray drift decision from 2012 was not considered in the 2013 reassessment of the substances. Therefore the Committee considered it to be “new” information.

### ***Chlorpyrifos-methyl***

3.13. The applicant has provided information about the effects of chlorpyrifos-methyl and chlorpyrifos-methyl-containing substances, and decisions by overseas agencies to restrict or prohibit these substances based on their effects.

3.14. The information is contained in the following reports referenced by the applicant:

- European Commission decision (Official Journal of the European Union, L7/11)
- EFSA human health risk assessment (EFSA Journal 2019 17(11)5908).

3.15. EFSA were unable to conduct a risk assessment for the impact on workers, bystanders and residents because of unclear genotoxic effects, which they considered a critical area of concern for chlorpyrifos-methyl. They considered that chlorpyrifos-methyl met the criteria to be a developmental toxicant (equivalent to the HSNO classification 6.8A, which has not been applied to chlorpyrifos-methyl in New Zealand).

3.16. The European Commission did not renew the approval of chlorpyrifos-methyl for these reasons.

3.17. The Committee considered that the information provided is “significant” because it provides justification for revising the hazard classification, risk assessment, and accordingly the controls on the substances.

3.18. The Committee also noted that the information supplied was published between 2019 and 2020, and was therefore not available during the initial approval, or previous reassessments, of the substances. Therefore the Committee considered these to be “new” information.

### **A change in controls under the Health and Safety at Work Act 2015 (section 62(2)(aa))**

3.19. This factor is not relevant to this application.

### **Another substance with similar or improved beneficial effects and reduced adverse effects has become available (section 62(2)(b))**

3.20. This factor is not relevant to this application.

### **Information showing a significant change of use, or a significant change in the quantity manufactured, imported, or developed has become available (section 62(2)(c))**

3.21. This factor is not relevant to this application.

### **Other reasons for requesting a reassessment under section 62(2)**

3.22. This factor is not relevant to this application.

## **4. Issues and concerns to Māori**

4.1. The Committee has considered Māori perspectives regarding the applicant’s wish to determine whether there are grounds for the reassessment of the substance. The Committee noted that, if this application is approved and a subsequent reassessment applied for, wider public notification and/or consultation will be undertaken, including with Iwi/Māori.

- 4.2. The Committee considered that there were no issues related to the principles of the Treaty of Waitangi to be addressed in the context of this application. The Committee noted that these principles will be considered if a subsequent reassessment application is received.

## 5. International obligations

- 5.1. The Committee has considered New Zealand's international obligations regarding the applicant's wish to determine whether there are grounds for the reassessment of the substance.
- 5.2. The Committee noted that these international obligations will be considered if a subsequent reassessment application is received.

## 6. Consideration

- 6.1. The Committee considered that there is significant new information relating to the effects of the substances in view of new, lower acceptable human health concentrations and associated concerns, concerns regarding the effects on aquatic and terrestrial environments, and widespread restrictions and prohibitions introduced by overseas agencies within their jurisdictions.
- 6.2. Taking that into account, the Committee considered that grounds exist under section 62 of the Act for the reassessment of chlorpyrifos, chlorpyrifos-methyl, and substances that contain them, on the basis that significant new information about the effects of the substance has become available (section 62(2)(a)).



Signed by:

Date: 15 September 2020

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**Dr Derek Belton**  
**Chair, Decision-making Committee**  
**Environmental Protection Authority**

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## Appendix: Indicative substances considered in this decision

The approved hazardous substances that are included in this Grounds decision are listed in the table below along with their approval numbers.

As applications for the approval of new hazardous substances can continue to be made and decided upon before any subsequent reassessment application is submitted, this list is considered to be indicative only.

Substance	Approval number
Chlorpyrifos	HSR002942
Chlorpyrifos-methyl	HSR004064
Granular material containing 100 g/kg chlorpyrifos	HSR000163
Wettable powder containing 500 g/kg chlorpyrifos	HSR000165
Water dispersible granule containing 750 g/litre chlorpyrifos	HSR000167
Granular material containing 50 g/kg chlorpyrifos. Also contains xylene	HSR000170
Emulsifiable concentrate containing 480 g/litre chlorpyrifos	HSR000171
Wettable powder containing 56.25 g/kg carbendazim, 93.75 g/kg chlorpyrifos and 400 g/kg mancozeb	HSR000173
Emulsifiable concentrate containing 450 - 500 g/litre chlorpyrifos	HSR000224
Emulsifiable concentrate containing 480 g/litre chlorpyrifos. Also contains xylene	HSR000225
Solid containing 50 - 55 g/kg chlorpyrifos	HSR007698
Rampage	HSR100018
Liquid containing 250 - 350 g/litre chlorpyrifos	HSR100298
Rampage 20G	HSR100881
GF-2595	HSR100908
Liquid containing 400 - 500 g/litre chlorpyrifos methyl	HSR100299
Liquid containing 500 - 600 g/litre chlorpyrifos methyl	HSR100326