

APPROVAL

Reissued: 19 July 2019

Amended under section 67A: 19 November 2019

Amended under section 63A and 63C: 11 August 2021

Summary

| Substance | Methyl bromide |
|----------------------------|--|
| Application code | APP203660 |
| Application type | To reissue an approval for a hazardous substance under clause 4 of Schedule 7 of the Hazardous Substances and New Organisms (HSNO) Act 1996 ("the Act") |
| Purpose of the application | To reissue the approval for methyl bromide |
| Reissue Date | 19 July 2019 |
| Considered by | The Chief Executive ¹ of the Environmental Protection Authority ("the EPA") |
| Decision | Approved for reissue |
| Approval code | HSR001635 |
| Hazard classifications | Flammable gas Category 2 Acute oral toxicity Category 3 Acute inhalation toxicity Category 3 Specific target organ toxicity – single exposure Category 3 respiratory tract irritation Skin corrosion Category 1C Serious eye damage Category 1 Germ cell mutagenicity Category 1 Reproductive toxicity Category 2 Specific target organ toxicity (repeated exposure) Category 1 Hazardous to the aquatic environment acute Category 1 Hazardous to the aquatic environment chronic Category 1 Hazardous to soil organisms Hazardous to terrestrial vertebrates Hazardous to terrestrial invertebrates |

¹ The Chief Executive of the EPA has made the decision on this application under delegated authority in accordance with section 19 of the Act.

Decision

1. Pursuant to clause 4 of Schedule 7 of the Act, I have considered this approval to reissue.
2. I have considered the matters raised in sections 4 to 8 of the Act but, given the nature of the reissue is administrative, there are not further considerations required in order to achieve the purpose of the Act.
3. I consider it appropriate to reissue HSR001635 with the controls set out in the Appendix in accordance with clause 4 of Schedule 7 of the Act. Therefore the new approval is now made under section 29 of the Act, in accordance with clause 4(5) of Schedule 7, and Schedule 7 no longer applies to the new approval.
4. The transitional provisions of the relevant EPA Notices apply to the reissued approval for the transitional period which begins on the date of reissue and ends on 30 November 2021.



Environmental
Protection Authority
Te Mana Rauhi Taiao

Signed by:

Date: 19/07/2019

Dr Allan L Freeth

Chief Executive, EPA

Amendments

Amendment under section 67A (per decision APP203953)

To amend the approval for methyl bromide to correct a minor or technical error.

Decision maker: The Chief Executive of the Environmental Protection Authority

Date: 19 November 2019

Amendment under section 63A (per decision APP203660)

To change the definition of recapture and the associated use controls.

Decision maker: A Decision-making Committee, Environmental Protection Authority

Date: 11 August 2021

Amendment under section 63C (per decision APP203660)

To amend the approval for methyl bromide to change the hazard classifications to GHS.

Decision maker: A Decision-making Committee, Environmental Protection Authority

Date: 11 August 2021

Appendix A: Controls applying to methyl bromide

EPA controls

| Control code | EPA Notice | Control description |
|--------------|---|---|
| LAB | EPA Labelling Notice 2017 | Requirements for labelling of hazardous substances |
| PKG | EPA Packaging Notice 2017 | Requirements for packaging of hazardous substances |
| SDS | EPA Safety Data Sheet Notice 2017 | Requirements for safety data sheets for hazardous substances |
| DIS | EPA Disposal Notice 2017 | Requirements for disposal of hazardous substances |
| HPC-1 | EPA Hazardous Property Controls Notice 2017 Part 1 | Hazardous Property Controls preliminary provisions |
| HPC-2 | EPA Hazardous Property Controls Notice 2017 Part 2 | Certain substances restricted to workplaces only |
| HPC-3 | EPA Hazardous Property Controls Notice 2017 Part 3 | Hazardous substances in a place other than a workplace |
| HPC-4A | EPA Hazardous Property Controls Notice 2017 Part 4A | Site and storage controls for class 9 substances |
| HPC-4B | EPA Hazardous Property Controls Notice 2017 Part 4B | Use of class 9 substances |
| HPC-4C | EPA Hazardous Property Controls Notice 2017 Part 4C | Qualifications required for application of class 9 pesticides |

HSNO additional controls and modifications to controls for all uses of methyl bromide

| Control code | HSNO Act | Control |
|--------------|-------------|---|
| TEL | Section 77B | <p>The following tolerable exposure limits in air (TEL_{air}) values apply to methyl bromide.</p> <p>1-hour TEL_{air} – 1 ppm or 3.9 mg/m³</p> <p>24-hour TEL_{air} – 0.333 ppm or 1.3 mg/m³</p> <p>Chronic TEL_{air} (annual average) – 0.0013 ppm or 0.005 mg/m³</p> |

HSNO additional controls and modifications to controls for soil fumigation of potato wart uses of methyl bromide

| Control code | HSNO Act | Control |
|------------------|--|---|
| Application rate | Section 77 variation to HPC Notice clause 50 | The maximum application rate of this substance is 380 grams of methyl bromide per square metre of soil. |

HSNO additional controls and modifications to controls for other quarantine and pre-shipment uses of methyl bromide

Definitions

For the purpose of this approval—

1-hour exposure level means the average exposure level for each 60-minute time period from the start of ventilation until the end of the buffer zone period.

24-hour exposure level means the average exposure level for each 24-hour time period from the start of ventilation until the end of the buffer zone period.

Annual exposure level means the total of 24-hour exposure levels recorded over a calendar year and averaged over 365 days.

Annual average recapture performance means the average reduction of methyl bromide per fumigation event for which recapture technology is used, for a given site at which quarantine or pre-shipment fumigation occurs using methyl bromide (that is, not averaged nationally or regionally) for a calendar year.

Buffer zone means, in relation to an area being fumigated, an area extending outward in all directions from the perimeter of each enclosed space being fumigated to the relevant distance.

Buffer zone period means, in relation to the application of methyl bromide, the period starting when methyl bromide is first applied to an enclosed space and ending when the specified recording of data is no longer required in relation to that application.

Container means anything used to contain methyl bromide during fumigation, except a ship's hold or sheet.

Discharge means the unintentional release of methyl bromide into open air.

Dosed to concentration means applying sufficient methyl bromide into the enclosed space to achieve a specified headspace concentration.

Enclosed space means a container, a ship's hold, or the space under a sheet.

Event recapture proportion means the percentage of fumigation events for which appropriate recapture technology must be used, at each location of use, for a calendar year.

Fumigation event means the fumigation of one enclosed space.

Fumigation under sheets means fumigation carried out under sheets of plastic, tarpaulins, or other materials having a low mass transfer coefficient for the fumigant being used.

Minimum recapture means the minimum reduction of methyl bromide from the maximum amount of methyl bromide in the enclosed space that must be achieved for a fumigation event.

PCBU has the meaning defined in section 17 of the Health and Safety at Work Act 2015.

Recapture technology means a system that mitigates methyl bromide emissions from fumigation enclosures.

Site means in relation to the use of methyl bromide on land, an area of land within a workplace where methyl bromide is used and (regardless of whether the area is bisected by a road or right of way) that—

- (a) consists of—
 - (i) a single allotment or other legally defined parcel of land that is the smaller of—
 - (A) an allotment or parcel held in a single certificate of title;
 - (B) an allotment or parcel for which a separate certificate of title could be issued without the further consent of the relevant local authority; or
 - (ii) 2 or more adjoining legally defined parcels of land held together in 1 certificate of title in such a way that the lots cannot be dealt with separately without the further consent of the relevant local authority; or
 - (iii) 2 or more adjoining certificates of title that are—
 - (A) subject to a condition imposed under section 37 of the Building Act 2004 or section 240 of the Resource Management Act 1991; or
 - (B) held together in such a way that they cannot be dealt with separately without the further consent of the relevant local authority; and
- (b) contains—

- (i) for land subdivided under the cross lease or company lease systems (other than strata titles),—
 - (A) a building or buildings used for residential or business purposes with any accessory building, plus any land exclusively restricted to the users of that building; or
 - (B) a remaining share or shares in the fee simple creating a vacant part of the whole for future cross lease or company lease purposes; and
- (ii) for land subdivided under the Unit Titles Act 2010 (other than strata titles), a principal unit or proposed unit on a unit plan together with its accessory units, and includes—
 - (A) for strata titles, an area of land comprised in underlying certificate of titles, immediately before subdivision; and
 - (B) an activity that occupies more than 1 adjoining allotment, whether held in single legal title or multiple titles, and for the purpose of compliance with any rules that specify a level of effect at the boundary or that specify capacities or discharge quantities, the total area of land occupied by that activity, the boundary of which is the boundary around that area of land.

Ventilate means the release of methyl bromide into the atmosphere, and **ventilation** has a corresponding meaning.

| Control code | HSNO Act | Control |
|---------------------------------------|-------------|---|
| Prohibition of ship's hold fumigation | Section 77A | (1) From 1 January 2023, no person may apply methyl bromide for the fumigation of ship's holds. (2) From 1 January 2023, the PCBU with management or control of quarantine or pre-shipment fumigation using methyl bromide must ensure that fumigation of ship's holds using methyl bromide does not occur. |
| Notification of fumigation | Section 77A | (1) From 1 January 2022, a PCBU with management or control of quarantine or pre-shipment fumigation using methyl bromide must notify the PCBU's intention to carry out a fumigation event to— <ul style="list-style-type: none"> (a) the relevant territorial authority; and (b) neighbouring marae and neighbouring community facilities. (2) The PCBU must ensure that the notifications referred to in subclause (1) are made not less than 24 hours before the start of the fumigation event. |
| Use of recapture technology | Section 77A | (1) From the relevant start date specified in Table A or Table B , a PCBU with management or control of quarantine or pre-shipment fumigation using methyl bromide must ensure that methyl bromide is not applied unless— |

| Control code | HSNO Act | Control |
|-------------------------|-------------|--|
| | | <ul style="list-style-type: none"> (a) recapture technology is used; and (b) the recapture technology used is— <ul style="list-style-type: none"> (i) capable of achieving the performance criteria for the relevant circumstance of use specified in Table A or Table B; and (ii) used in a manner that will achieve the specified performance criteria for the relevant circumstance of use. <p>(2) From the relevant start date specified in Table A or Table B for a given circumstance of use, a PCBU with management or control of quarantine or pre-shipment fumigation using methyl bromide must ensure that—</p> <ul style="list-style-type: none"> (a) the event recapture proportion is achieved or exceeded; and (b) the annual average recapture performance is achieved or exceeded. <p>(3) For avoidance of doubt, the relevant minimum recapture values specified in Table A and Table B apply to each fumigation event for containers and fumigations under sheets respectively. The minimum recapture performance must not to be averaged between events, by location, by operator, or nationally; nor by time across any of these groupings.</p> |
| Dosing to concentration | Section 77A | <p>(1) For fumigation under sheets—</p> <ul style="list-style-type: none"> (a) from 1 January 2024, the PCBU with management or control of quarantine or pre-shipment fumigation using methyl bromide must ensure that a minimum of 50% of fumigations events carried out in a calendar year are dosed to concentration; and (b) from 1 January 2027, the PCBU with management or control of quarantine or pre-shipment fumigation using methyl bromide must ensure that all fumigation events are dosed to concentration. <p>(2) For fumigation of containers—</p> <ul style="list-style-type: none"> (a) from 1 January 2024, the PCBU with management or control of quarantine or pre-shipment fumigation using methyl bromide must ensure that a minimum of 50% of fumigations events carried out in a calendar year are dosed to concentration; and |

| Control code | HSNO Act | Control |
|-----------------------------|-------------|---|
| | | <p>(b) from 1 January 2027, the PCBU with management or control of quarantine or pre-shipment fumigation using methyl bromide must ensure that all fumigation events are dosed to concentration.</p> |
| Ventilation | Section 77A | <p>(1) A PCBU with management or control of quarantine or pre-shipment fumigation using methyl bromide must ensure that ventilation of any fumigation event only occurs when wind speed is at least 2 m/s.</p> <p>(2) Until 1 January 2023 when it becomes prohibited, when ventilating ship's holds after a fumigation event, the PCBU must ensure that there is a two hour time gap between the venting of individual ship's holds.</p> |
| Requirement to keep records | Section 77A | <p>(1) A PCBU with management or control of quarantine or pre-shipment fumigation using methyl bromide must ensure that accurate records are kept, for each application, of the data specified in this control.</p> <p>(2) If recapture technology is used, the data required is—</p> <ul style="list-style-type: none"> (a) the date and time of each application, recapture, and ventilation; and (b) the amount of methyl bromide applied, recaptured, and ventilated; and (c) the location where methyl bromide was applied, recaptured, and ventilated; and (d) the type of enclosed space into which methyl bromide was applied; and (e) the capacity of the enclosed space; and (f) the name of each worker using methyl bromide and the physical address of the worker's workplace; and (g) the amount of methyl bromide in the enclosed space's head space at the end of the fumigation phase; and (h) the amount of methyl bromide in the enclosed space's head space at the end of the recapture phase; and (i) the wind speed and direction every 3 minutes at the location during active ventilation; and (j) the wind speed and direction every hour during periods where passive ventilation occurs; and |

| Control code | HSNO Act | Control |
|--------------|----------|---|
| | | <ul style="list-style-type: none"> (k) for each monitoring location, individual exposure level values, and 1-hour, 24-hour, and annual average exposure levels; and (l) for each monitoring location, the type, substances measured, limit of detection, and location of the monitoring equipment used to record the exposure levels. <p>(3) If recapture technology is not used, the data required is—</p> <ul style="list-style-type: none"> (a) the date and time of each application and ventilation; and (b) the amount of methyl bromide applied; and (c) the location where methyl bromide was applied and ventilated; and (d) the wind speed and direction every 3 minutes at the location during ventilation; and (e) the type of enclosed space into which methyl bromide was applied; and (f) the capacity of the enclosed space; and (g) the name of each worker using methyl bromide and the physical address of the worker's workplace; and (h) the amount of methyl bromide in the enclosed space's head space at the end of the fumigation phase; and (i) the wind speed and direction every hour during periods when passive ventilation of methyl bromide desorbing from logs occurs; and (j) for each monitoring location, individual exposure level values, and 1-hour, 24-hour and annual average exposure levels; and (k) for each monitoring location, the substances measured by the monitoring equipment, and the equipment's limit of detection for each substance. <p>(4) For each discharge of methyl bromide during fumigation, the data required is—</p> <ul style="list-style-type: none"> (a) the date and time of each discharge; and (b) the approximate amount of methyl bromide discharged; and (c) the location where methyl bromide was discharged; and |

| Control code | HSNO Act | Control |
|---|-------------|---|
| | | <ul style="list-style-type: none"> (d) the approximate wind speed and direction at the location when the discharge occurred; and (e) where the discharge occurred from; and (f) the reason why the discharge occurred; and (g) the capacity of the enclosed space; and (h) the name of each worker using methyl bromide and the physical address of the worker's workplace. <p>(5) The PCBU must ensure that the data required to be recorded by this control is recorded every 3 minutes from the start of ventilation until the exposure level is below 0.05 ppm for at least—</p> <ul style="list-style-type: none"> (a) 15 minutes, where 7 kg or more of methyl bromide is applied in a 1-hour period; or (b) 3 minutes, where less than 7 kg of methyl bromide is applied in a 1-hour period. <p>(6) The PCBU must ensure that the records required by subclause (1) are—</p> <ul style="list-style-type: none"> (a) kept for not less than 7 years after the date of the fumigation event to which they relate; and (b) made available for inspection during that period. |
| Notification of TEL _{air} exceedance | Section 77A | <p>A PCBU with management or control of quarantine or pre-shipment fumigation using methyl bromide must—</p> <ul style="list-style-type: none"> (a) notify the relevant territorial authority as soon as practicable and within 24 hours if— <ul style="list-style-type: none"> (i) the 1-hour exposure level exceeds the 1-hour TEL_{air} value for methyl bromide; or (ii) the 24-hour exposure level exceeds the 24-hour TEL_{air} value for methyl bromide; and (b) include in the notification— <ul style="list-style-type: none"> (i) the source of that exceedance; and (ii) the exposure value(s) that exceed the appropriate TEL_{air} value: and |

| Control code | HSNO Act | Control |
|------------------|-------------|---|
| | | <p>(iii) the individual monitoring values that were used to generate each relevant 1-hour or 24-hour exposure level.</p> |
| Annual reporting | Section 77A | <p>(1) A PCBU with management or control of quarantine or pre-shipment fumigation using methyl bromide in the preceding calendar year must provide an annual report to the Environmental Protection Authority by 30 June each year.</p> <p>(2) The annual report must contain the following information for each calendar year:</p> <ul style="list-style-type: none"> (a) the number of quarantine or pre-shipment fumigations using methyl bromide carried out at the site; and (b) the total amount of methyl bromide applied at the site; and (c) the types of enclosed spaces to which methyl bromide has been applied; and (d) the types of equipment used to carry out the monitoring of methyl bromide, including details of the substances measured by the monitoring equipment, and the equipment's limit of detection for each substance; and (e) the annual exposure level at the site; and (f) the approximate total quantity of methyl bromide discharged; and (g) the number of notifications made as a consequence of the control titled "Notification of TEL_{air} exceedance", identified by each monitoring location; and (h) the number of times the exposure levels exceeded the TEL_{air} value; and (i) if a breach of a TEL_{air} value has occurred then the annual monitoring report must contain— <ul style="list-style-type: none"> (i) an outline of what risk mitigation measures have been or are being taken; (ii) the source of that breach; and (iii) the exposure value(s) that exceed the appropriate TEL_{air} value; and (iv) the individual monitoring values that were used to generate that averaging time exposure value for comparison with the TEL; and |

| Control code | HSNO Act | Control |
|--------------|-------------|--|
| | | <ul style="list-style-type: none"> (j) any accidents or other issues related to non-compliance with these controls or with any of the applicable requirements in the Health and Safety at Work (Hazardous Substances) Regulations 2017; and (k) for each fumigation event— <ul style="list-style-type: none"> (i) the amount of methyl bromide in the enclosed space's head space at the end of the fumigation phase; and (ii) the amount of methyl bromide in the enclosed space's head space at the end of the recapture phase if recapture technology has been used; and (iii) the amount of methyl bromide recaptured if recapture technology has been used; and (l) the annual average recapture performance for the site; and (m) the event recapture proportion for the site. <p>(3) The annual report must detail progress towards the reduction of methyl bromide emissions, including—</p> <ul style="list-style-type: none"> (a) technology and process developments to ensure that future recapture targets are met; and (b) other actions taken to reduce methyl bromide emissions and use. |
| Buffer zones | Section 77A | <ul style="list-style-type: none"> (1) From 1 January 2022, for fumigation under sheets, a PCBU with management or control of quarantine or pre-shipment fumigation using methyl bromide must set a buffer zone for each fumigation that is equal to or more than the relevant distance in Table C for the relevant dose rate of methyl bromide. (2) For fumigation of containers of up to 77 m³ in volume the PCBU must set a buffer zone for each fumigation that is equal to or more than 10 m. (3) For fumigation of containers equal to or greater than 77 m³ in volume the PCBU must set a buffer zone for each fumigation that is equal to or more than 25 m. (4) From 1 January 2022 until it is prohibited on 1 January 2023, for fumigation of ship's holds, the PCBU must set a buffer zone for each fumigation that is equal to or more than 900 m. (5) The PCBU must ensure that— |

| Control code | HSNO Act | Control |
|--------------|----------|--|
| | | <p>(a) no member of the public is in the buffer zone during the buffer zone period; and</p> <p>(b) the buffer zone is kept under observation; and</p> <p>(c) the buffer zone is sufficiently large to ensure that the TEL_{air} for methyl bromide is not exceeded beyond the boundary of the buffer zone.</p> |

Table A. Performance criteria of recapture technology for every methyl bromide fumigation event in containers

| Start date | Minimum recapture (%) |
|----------------|-----------------------|
| 1 January 2023 | 80% |
| 1 January 2027 | 90% |
| 1 January 2031 | 99% |

Table B. Performance criteria of recapture technology for methyl bromide fumigations under sheets

| Start date | Event recapture proportion (%) | Minimum recapture (%) | Annual average recapture performance (%) |
|----------------|--------------------------------|-----------------------|--|
| 1 January 2022 | 50 | 30 | 55 |
| 1 January 2023 | 75 | 40 | 60 |
| 1 January 2025 | 100 | 50 | 65 |
| 1 January 2027 | 100 | 60 | 75 |
| 1 January 2029 | 100 | 70 | 85 |
| 1 January 2031 | 100 | 80 | 95 |
| 1 January 2033 | 100 | 90 | 99 |
| 1 January 2035 | 100 | 99 | 99 |

Table C. Minimum buffer zones for methyl bromide fumigation under sheets

| Minimum recapture (%) | Minimum buffer zone: | Minimum buffer zone: | Minimum buffer zone: |
|-----------------------|--|--|---|
| | dose rate $\leq 40 \text{ g/m}^3$ (m) | $40 \text{ g/m}^3 < \text{dose rate} \leq 72 \text{ g/m}^3$ (m) | $72 \text{ g/m}^3 < \text{dose rate} \leq 120 \text{ g/m}^3$ (m) |
| No recapture | 210 | 515 | 700 |
| 30 | 155 | 380 | 520 |
| 40 | 135 | 335 | 455 |
| 50 | 120 | 290 | 395 |
| 60 | 100 | 245 | 335 |
| 70 | 80 | 200 | 270 |
| 80 | 65 | 155 | 210 |
| 90 | 50 | 110 | 150 |
| 99 | 50 | 70 | 95 |

HSW requirements

Advisory Note: These requirements are not set for the substance but apply in their own right under the HSW (Hazardous Substances) Regulations 2017 according to the classification of the substance. They are listed here for information purposes only.

| Control code | Regulation Part | Description |
|--------------|-----------------|--|
| HSW1 | Part 1 | <u>Application</u> |
| HSW2 | Part 2 | <u>Labelling, signage, safety data sheets, and packaging</u> |
| HSW3 | Part 3 | <u>General duties relating to risk management</u> |
| HSW4 | Part 4 | <u>Certified handlers and supervision and training of workers</u> |
| HSW5 | Part 5 | <u>Emergency management</u> |
| HSW8 | Part 8 | <u>Controls applying to all class 1 to 5 substances</u> |
| HSW10 | Part 10 | Class 2, 3 and 4 substances |
| HSW11 | Part 11 | <u>Controls relating to adverse effects of unintended ignition of class 2 and 3.1 substances</u> |

| Control code | Regulation Part | Description |
|--------------|-----------------|---|
| HSW13 | Part 13 | <u>Class 6 and 8 substances</u> |
| HSW14 | Part 14 | <u>Fumigants</u> |
| HSW15 | Part 15 | <u>Gases under pressure</u> |
| HSW16 | Part 16 | <u>Tank wagons and transportable containers</u> |
| HSW17 | Part 17 | <u>Stationary container systems</u> |
| SWI14-1 | | <u>Health and Safety at Work (Hazardous Substances—Modified Requirements for Specified Fumigants) Safe Work Instrument 2017</u> |

Appendix B: Regulatory history

This appendix is for information purposes only.

| Application code | Application type | Date decided | Comment |
|------------------|---|------------------|---|
| TRS05004 | Hazardous Substances (Fumigants) Transfer Notice 2004 | 29 October 2004 | Transfer of substance into the Hazardous Substances and New Organisms Act |
| HRC08002 | Reassessment under section 63 of the Act | 28 October 2010 | New approval issued pursuant to a full reassessment under s63 of the Act |
| APP203660 | Reissue an approval for a hazardous substance under clause 4 of Schedule 7 of the Act | 19 July 2019 | Approval reissued to apply EPA Notice controls |
| APP203953 | Minor or technical amendment to under section 67A of the Act | 19 November 2019 | Approval amended to correct a minor or technical error |
| APP203660 | Modified reassessment under section 63A of the Act | 11 August 2021 | Approval amended to change recapture control and associated use controls |
| APP203660 | Modified reassessment under section 63C of the Act | 11 August 2021 | Approval amended to change the hazard classifications to GHS |