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Resource Recovery Order under Part 9, Clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014

The Closed Loop rapidly decomposed food waste order June 2020

Introduction

This order, issued by the Environment Protection Authority (EPA) under clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014 (Waste Regulation), imposes the requirements that must be met by processors of rapidly decomposed food waste from specified Closed Loop units, to which 'the Closed Loop rapidly decomposed food waste exemption June 2020' applies. The requirements in this order apply to the supply of rapidly decomposed food waste for application to land as a soil amendment.

1. Waste to which this order applies

- 1.1. This order applies to rapidly decomposed food waste. In this order, rapidly decomposed food waste means the decomposed output from the mechanical mixing and heating of food waste produced by specified Closed Loop units.

2. Persons to whom this order applies

- 2.1. The requirements in this order apply, as relevant, to any person who supplies rapidly decomposed food waste that has been generated, processed or recovered by the person.
- 2.2. This order does not apply to the supply of rapidly decomposed food waste to a consumer for land application at a premises for which the consumer holds a licence under the POEO Act that authorises the carrying out of the scheduled activities on the premises under clause 39 'waste disposal (application to land)' or clause 40 'waste disposal (thermal treatment)' of Schedule 1 of the POEO Act.

3. Duration

- 3.1. This order commences on 29 June 2020 and is valid until 28 June 2021 unless revoked by the EPA in writing at an earlier date.

4. Processor requirements

The EPA imposes the following requirements on any processor who supplies rapidly decomposed food waste.

General conditions

- 4.1. On or before supplying rapidly decomposed food waste, the processor must ensure that the rapidly decomposed food waste:
 - 4.1.1. does not include grease trap waste or animal waste.

- 4.1.2. does not contain any physical contaminants, including but not limited to glass, metal, rigid or flexible plastics (including compostable plastics) or polystyrene.
- 4.1.3. is in a form and condition that is suitable for land application as a soil amendment.
- 4.1.4. has completed at least one full operational cycle by the specified unit.

Sampling requirements

- 4.2. On or before supplying rapidly decomposed food waste, the processor must:
 - 4.2.1. Prepare a written sampling plan for the rapidly decomposed food waste which includes a description of the input to the specific unit sampled, sample preparation, and storage procedures for the rapidly decomposed food waste samples. The sampling plan must include the appropriate holding times for all tests including microbiological testing.
 - 4.2.2. Undertake sampling and testing of the rapidly decomposed food waste as required under clause 4.3. The sampling must be carried out in accordance with the written sampling plan.
- 4.3. The processor must undertake characterisation of the rapidly decomposed food waste by:
 - 4.3.1. collecting 10 composite samples and testing each sample for the chemicals and other attributes listed in Column 1 of Table 1. Each composite sample must be taken from a single batch that has not been previously sampled for the purposes of characterisation. A maximum of two composite samples must be collected per month. Characterisation must be conducted on the rapidly decomposed food waste within 12 months following the commencement of the process¹; or
 - 4.3.2. an alternative sampling and testing program that is approved by the EPA.

Chemical and other material requirements

- 4.4. The processor must not supply rapidly decomposed food waste to any person if, in relation to any of the chemical and other attributes of the rapidly decomposed food waste:
 - 4.4.1. The concentration or other value of that attribute of any sample collected and tested as part of the characterisation of the rapidly decomposed food waste exceeds the absolute maximum concentration or other value listed in Column 2 of Table 1.
- 4.5. The absolute maximum concentration or other value of that attribute in any rapidly decomposed food waste supplied under this order must not exceed the absolute maximum concentration or other value listed in Column 2 of Table 1.

¹ Processors should note that further testing will be required after the first year. Further testing will be determined on the review of the results from the first year.

Table 1

Column 1	Column 2
Chemical and other attributes	Absolute maximum concentration¹ (% 'dry weight' unless otherwise specified)
1. <i>Salmonella</i> spp.	Absent in 25 grams
2. <i>Escherichia coli</i> (<i>E. coli</i>)	Absent at limit of detection (Most probable number per gram)
3. <i>Clostridium perfringens</i>	Absent at limit of detection (colony forming units per gram)
4. <i>Bacillus cereus</i>	Absent at limit of detection (colony forming units per gram)
5. Particle size >9.5 mm	0 % mass
6. Electrical conductivity	N/A ²
7. Sodium mg/kg	N/A ²
8. Moisture content percentage	10%
9. pH	N/A ²

¹Processors should note that holding times for some of these tests are short and processors should check with the laboratories before sampling. For example, some microorganism samples must be analysed within 24 hours of collection.

² While limits are not included for 6, 7 and 9, these must be tested in each sample and records kept of the results.

Test methods

- 4.6. The processor must ensure that any testing of samples required by this order is undertaken by analytical laboratories accredited by the National Association of Testing Authorities (NATA), or equivalent.
- 4.7. The processor must ensure that the chemical and other attributes (listed in Column 1 of Table 1) in the rapidly decomposed food waste supplied are tested in accordance with the test methods specified below. Where an equivalent analytical method is used the detection limit must be equal to or less than the detection limit for the method given below.
- 4.7.1. Test method for the detection of *Salmonella*:
- 4.7.1.1. Australian Standard 5013.10-2009 Food microbiology - Microbiology of food and animal feeding stuffs - Horizontal method for the detection of *Salmonella* spp., or an equivalent analytical method.
- 4.7.1.2. Report as absent or present in 25 grams.
- 4.7.2. Test method for *E. coli*:
- 4.7.2.1. Australian Standard AS5013.15-2006 Food microbiology - Microbiology of food and animal feeding stuffs - Horizontal method for the detection and enumeration of presumptive *Escherichia coli* - Most probable number (MPN) technique, or an equivalent analytical method.
- 4.7.2.2. Report as MPN / g.
- 4.7.3. Test method for *Clostridium perfringens*:
- 4.7.3.1. Australian Standard AS 5013.16-2006 Food microbiology - Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of *Clostridium perfringens* —Colony-count technique - colony forming units (CFU) technique, or an equivalent analytical method.
- 4.7.3.2. Report as CFU / g.

- 4.7.4. Test method for *Bacillus cereus*:
- 4.7.4.1. Australian Standard AS 5013.2-2007 Food microbiology - Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of *Bacillus cereus* - Colony-count technique at 30C - colony forming units (CFU) technique, or an equivalent analytical method.
- 4.7.4.2. Report as CFU / g.
- 4.7.5. Test method for measuring maximum particle size:
- 4.7.5.1. Analysis using Australian Standard AS4454-2012 Composts, soil conditioners and mulches, Appendix G – Method for Determination of Particle Size Grading.
- 4.7.5.2. Results must be reported as % by mass retained on a sieve with 9.5 mm apertures.
- 4.7.5.3. The entire sample must pass through the sieve.
- 4.7.6. Test method for electrical conductivity:
- 4.7.6.1. Analysis using Method 3A1 Electrical Conductivity (EC) of 1:5 rapidly decomposed food waste:water extract from SOIL CHEMICAL METHODS – Australasia, Rayment and Lyons 2011.
- 4.7.6.2. Report in dS/m on an air-dry basis.
- 4.7.7. Test method for sodium:
- 4.7.7.1. Sample preparation using USEPA SW-846 Method 3050B Acid digestion of sediments, sludges, and soils.
- 4.7.7.2. Analysis using USEPA SW-846 Method 6010C Inductively coupled plasma – optical emission spectrometry.
- 4.7.7.3. Report as mg/kg.
- 4.7.8. Test method for moisture content:
- 4.7.8.1. Analysis using method Method 2A1 Air dry moisture content from SOIL CHEMICAL METHODS – Australasia, Rayment and Lyons 2011.
- 4.7.8.2. Report as %.
- 4.7.9. Test method for pH:
- 4.7.9.1. Prepare sample by mixing one part of rapidly decomposed food waste with 5 parts of water using analysis method 4A1 pH of 1:5 soil/water suspension from SOIL CHEMICAL METHODS – Australasia, Rayment and Lyons 2011, or an equivalent analytical method.
- 4.7.9.2. Report as pH on an air-dry basis.

Notification

- 4.8. On or before each transaction, the processor must provide the following to each person to whom the processor supplies the rapidly decomposed food waste:
- a written statement of compliance certifying that all the requirements set out in this order have been met;
 - a copy of “the Closed Loop rapidly decomposed food waste exemption June 2020”, or a link to the EPA website where the exemption can be found; and
 - a copy of “the Closed Loop rapidly decomposed food waste order June 2020”.

Record keeping and reporting

- 4.9. The processor must keep a written record of the following for a period of six years:
- the sampling plan required to be prepared under clause 4.2.1;
 - all test results in relation to the rapidly decomposed food wastes supplied;

- the quantity of any rapidly decomposed food waste supplied; and
 - the name and address of each person to whom the processor supplied the rapidly decomposed food waste.
- 4.10. The processor must notify the EPA within seven days of becoming aware that it has not complied with any requirement in clauses 4.1- 4.5.

5. Definitions

In this order:

animal waste means dead animals and animal parts and any mixture of dead animals and animal parts².

application or apply to land means applying to land by:

- spraying, spreading or depositing on the land;
- ploughing, injecting or mixing into the land; or
- filling, raising, reclaiming or contouring the land.

consumer means a person who applies, or intends to apply, rapidly decomposed food waste to land.

composite sample means a sample that combines five discrete sub-samples of equal size into a single sample for the purpose of analysis.

food waste means food waste from the manufacture, preparation, sale or consumption of food but does not include grease trap waste or animal waste.

grease trap waste means any grease, oils, solids, water or other matter resulting only from the preparation or manufacturing of food that is collected in a grease trap in the usual course of the operation of the grease trap. This definition includes dissolved air flotation (DAF) units used to treat grease trap waste, but does not include grease trap waste collected from grease traps in hospitals and shopping centres other than those solely from the preparation of food.

specified Closed Loop unit means the “CLO units” by Closed Loop Environmental Solutions Pty Ltd. The CLO unit is an enclosed vessel that uses a start-up culture of aerobic thermophilic bacteria and operates with agitation, forced airflow and an internal temperature of 60⁰C to 63⁰C (achieved by way of a jacketed external oil chamber maintained at 120⁰C) for a minimum period of 24 hours.

processor means a person who processes rapidly decomposed food wastes for supply to a consumer.

transaction means:

- in the case of a one-off supply, the supply of a batch, truckload or stockpile of rapidly decomposed food waste that is not repeated.
- in the case where the supplier has an arrangement with the recipient for more than one supply of rapidly decomposed food waste, the first supply of rapidly decomposed food waste as required under the arrangement.

Approved

Director Environmental Solutions (CLR)

Environment Protection Authority

(by delegation)

² see Notes section for guidance

Notes

The EPA may amend or revoke this order at any time. It is the responsibility of the processor to ensure it complies with all relevant requirements of the most current order.

In gazetting or otherwise issuing this order, the EPA is not in any way endorsing the supply or use of this substance or guaranteeing that the substance will confer benefit.

The conditions set out in this order are designed to minimise the risk of potential harm to the environment, human health or agriculture, although neither this order nor the accompanying exemption guarantee that the environment, human health or agriculture will not be harmed.

While this order requires that the rapidly decomposed food waste must not contain physical contaminants including but not limited to glass, metal, rigid and flexible plastics (whether compostable or not) or polystyrene, the EPA recognises that the rapidly decomposed food waste may contain extremely low or incidental amounts of physical contaminants. The processor must implement procedures to prevent the presence of physical contaminants in the rapidly decomposed food waste. These procedures must be formally documented and their implementation demonstrated. However, as noted in this order, the rapidly decomposed food waste must not contain any grease trap waste or animal waste.

Animal waste is defined as dead animals and animal parts and any mixture of these. Under the food waste definition in this order, it is intended that for example, meat waste from commercial kitchens and plate scrapings would be considered as food waste. However, animal carcasses or parts of animals from an animal slaughtering process are excluded.

Regardless of any exemption or order provided by the EPA, the person who causes or permits the application of the substance to land must ensure that the action is lawful and consistent with any other legislative requirements including, if applicable, any development consent(s) for managing operations on the site(s).

The supply of rapidly decomposed food waste remains subject to other relevant environmental regulations in the POEO Act and Waste Regulation. For example, a person who pollutes land (s. 142A) or water (s. 120), or causes air pollution through the emission of odours (s. 126), or does not meet the special requirements for asbestos waste (Part 7 of the Waste Regulation), regardless of this order, is guilty of an offence and subject to prosecution.

This order does not alter the requirements of any other relevant legislation that must be met in supplying this material, including, but not limited to the *Biosecurity Act 2015* and *Biosecurity Regulation 2017*.

Failure to comply with the conditions of this order constitutes an offence under clause 93 of the Waste Regulation.



Resource Recovery Exemption under Part 9, Clauses 91 and 92 of the Protection of the Environment Operations (Waste) Regulation 2014

The Closed Loop rapidly decomposed food waste exemption June 2020

Introduction

This exemption:

- is issued by the Environment Protection Authority (EPA) under clauses 91 and 92 of the Protection of the Environment Operations (Waste) Regulation 2014 (Waste Regulation); and
- exempts a consumer of rapidly decomposed food waste produced by specified Closed Loop units from certain requirements under the Protection of the Environment Operations Act 1997 (POEO Act) and the Waste Regulation in relation to the application of rapidly decomposed food waste to land, provided the consumer complies with the conditions of this exemption.

This exemption should be read in conjunction with 'the Closed Loop rapidly decomposed food waste order June 2020'.

1. Waste to which this exemption applies

- 1.1. This exemption applies to rapidly decomposed food waste processed in the specified Closed Loop units, which is, or is intended to be, applied to land as a soil amendment.
- 1.2. Rapidly decomposed food waste means the decomposed output from the mechanical mixing and heating of food waste produced by specified Closed Loop units.

2. Persons to whom this exemption applies

- 2.1. This exemption applies to any person who applies, or intends to apply, rapidly decomposed food waste to land as set out in 1.1.

3. Duration

- 3.1. This exemption commences on 29 June 2020 and is valid until 28 June 2021 unless revoked by the EPA by notice published in the Government Gazette at an earlier date.

4. Premises to which this exemption applies

- 4.1. This exemption applies to premises at which the consumer's actual or intended application of rapidly decomposed food waste is carried out.

5. Exemption

- 5.1. Subject to the conditions of this exemption, the EPA exempts each consumer from the following provisions of the POEO Act and the Waste Regulation in relation to the consumer's actual or intended application of rapidly decomposed food waste to land as a soil amendment at the premises:
- section 48 of the POEO Act in respect of the scheduled activities described in clauses 39 and 42 of Schedule 1 of the POEO Act;
 - Part 4 of the Waste Regulation;
 - section 88 of the POEO Act; and
 - clause 109 and 110 of the Waste Regulation.
- 5.2. The exemption does not apply in circumstances where rapidly decomposed food waste is received at the premises for which the consumer holds a licence under the POEO Act that authorises the carrying out of the scheduled activities on the premises under clause 39 'waste disposal (application to land)' or clause 40 'waste disposal (thermal treatment)' of Schedule 1 of the POEO Act.

6. Conditions of exemption

The exemption is subject to the following conditions:

General conditions

- 6.1. At the time the rapidly decomposed food waste is received at the premises, the material must meet all chemical and other material requirements which are required on or before the supply of rapidly decomposed food waste under 'the Closed Loop rapidly decomposed food waste order June 2020'.
- 6.2. The rapidly decomposed food waste can only be applied to land as a soil amendment on agricultural land, home gardens and for the purposes of landscaping. Food crops, where the harvested parts touch or are below the surface of the land, must not be grown at the land application site for 90 days after each application of rapidly decomposed food waste.
- 6.3. The rapidly decomposed food waste must not be land applied at high public contact sites, such as childcare centres and children's playgrounds¹.
- 6.4. The rapidly decomposed food waste must be incorporated into the topsoil at the time of application.
- 6.5. The rapidly decomposed food waste can be used as an input material at the start of a composting process as defined in 'the Compost Order 2016'.
- 6.6. The consumer must make any records required to be kept under this exemption available to authorised officers of the EPA on request.

Preventing leaching and exposure to vectors

- 6.7. The consumer must ensure that the rapidly decomposed food waste is appropriately contained prior to land application and when applying it to land, such that leaching or runoff from rapidly decomposed food waste is prevented.

¹The purpose of this condition is to avoid hand-to-mouth contact with soil in which rapidly decomposed food waste has been applied, especially for children and other vulnerable members of the community.

- 6.8. The consumer must ensure minimal risk of exposure to and transfer of pathogenic materials from the site by vectors (animals, birds and insects).
- 6.9. The consumer must ensure that any application of rapidly decomposed food waste to land occurs within a reasonable period of time after its receipt.

Livestock related

- 6.10. The consumer must not allow rapidly decomposed food waste to be fed to or come into contact with pigs or ruminants in accordance with clauses 37 and 38 of the *Biosecurity Regulation 2017*.
- 6.11. The consumer must apply a livestock-withholding period of 90 days following the land application of rapidly decomposed food waste.

Additional agricultural conditions

- 6.12. When used on agricultural land, the consumer must calculate application rates prior to the application of the rapidly decomposed food waste to land. The application rates must be equal to or less than the rate for the most limiting factor.
- 6.13. Where rapidly decomposed food waste is intended to be land applied within 4 weeks of any other exempted waste, an investigation to determine the suitability of the proposed application must be undertaken prior to the waste being received at the application site. A report must be prepared including, but not necessarily limited to, information detailing how the receiving site will benefit from multiple wastes being applied, how the matrices and constituents of the different wastes will interact, and what application rates will be appropriate to minimise the potential for environmental harm. The investigation should determine whether the land application will deliver a net benefit. Where a net benefit is not demonstrated the land application of rapidly decomposed food waste must not proceed. A written record of the report must be kept for a minimum period of three years.
- 6.14. When used on agricultural land, the consumer must keep a written record of the following for a period of six years:
 - the quantity of any rapidly decomposed food waste received; and
 - the name and address of the supplier of the rapidly decomposed food waste received.

7. Definitions

In this exemption:

agricultural land means land where the current or future use is for the purposes of agriculture which includes horticulture, turf and any purpose of husbandry. This includes keeping or breeding livestock, poultry or bees, and growing fruit, vegetables, field crops or pastures.

animal waste means dead animals and animal parts and any mixture of dead animals and animal parts.

application or apply to land means applying to land by:

- spraying, spreading or depositing on the land; or
- ploughing, injecting or mixing into the land; or
- filling, raising, reclaiming or contouring the land.

consumer means a person who applies, or intends to apply, rapidly decomposed food waste to land.

ruminant means an animal that has a rumen including, but not limited to, alpacas, camels, cattle, deer, goats and sheep as defined in Clause 3(1) Part 1 of the *Biosecurity Regulation 2017*.

food waste means food waste from the manufacture, preparation, sale or consumption of food but does not include grease trap waste or animal waste.

high public contact sites means land with a high potential for soil to mouth contact by the public, particularly children, including childcare centres and playgrounds.

specified Closed Loop unit means the “CLO units” by Closed Loop Environmental Solutions Pty Ltd. The CLO unit is an enclosed vessel that uses a start-up culture of aerobic thermophilic bacteria and operates with agitation, forced airflow and an internal temperature of 60°C to 63°C (achieved by way of a jacketed external oil chamber maintained at 120°C) for a minimum period of 24 hours.

processor means a person who produces rapidly decomposed food waste for supply to a consumer from the specified units in this exemption.

Approved

Director Environmental Solutions (CLR)

Environment Protection Authority

(by delegation)

Notes

The EPA may amend or revoke this exemption at any time. It is the responsibility of the consumer to ensure they comply with all relevant requirements of the most current exemption. The current version of this exemption will be available on www.epa.nsw.gov.au

In gazetting or otherwise issuing this exemption, the EPA is not in any way endorsing the use of this substance or guaranteeing that the substance will confer benefit.

The conditions set out in this exemption are designed to minimise the risk of potential harm to the environment, human health or agriculture, although neither this exemption nor the accompanying order guarantee that the environment, human health or agriculture will not be harmed.

Animal waste is defined as dead animals and animal parts and any mixture of these. Under the food waste definition in this exemption, it is intended that for example, meat waste from commercial kitchens and plate scrapings would be considered as food waste. However, animal carcasses or parts of animals from an animal slaughtering process are excluded.

Rapidly decomposed food waste is a decomposed material from the mechanical mixing and heating of food waste and is **not** the same as compost. Consumers should note that re-wetting of rapidly decomposed food waste will encourage growth of organisms that may remain in a dormant state after the process is completed. The output itself will sustain the growth of organisms, including pathogenic organisms, which are introduced from the receiving environment. Rewetting will also commence the usual decomposition process that occurs with all organic waste and has the potential to generate offensive odours.

Note that food crop restrictions apply in this exemption to prevent the transmission of pathogenic organisms from the soil to food. Food crops that when harvested come into contact with the soil such as carrots, potatoes, lettuces and leafy herbs, must not be grown in soil where decomposed food waste has been land applied for a period of less than 90 days after each application. However, the output material may be used for the growing of fruit or nut trees or vines at any time after land application but not where fallen produce is or may be collected off the ground within 90 days of application.

Rapidly decomposed food waste may be acidic and contain high levels of sodium and other salts. The consumer should assess whether or not the rapidly decomposed food waste is fit for the purpose for which it is proposed to be used, and whether this use will cause harm. The consumer may need to seek expert technical advice.

As rapidly decomposed food waste is dry and may contain powdery particles, care should be taken to reduce dust during handling and application.

Regardless of any exemption provided by the EPA, the person who causes or permits the application of the substance to land must ensure that the action is lawful and consistent with any other legislative requirements including, if applicable, any development consent(s) for managing operations on the site(s).

The receipt of rapidly decomposed food waste remains subject to other relevant environmental regulations in the POEO Act and the Waste Regulation. For example, a person who pollutes land (s. 142A) or water (s. 120), or causes air pollution through the emission of odours (s. 126), or does not meet the special requirements for asbestos waste (Part 7 of the Waste Regulation), regardless of having an exemption, is guilty of an offence and subject to prosecution.

This exemption does not alter the requirements of any other relevant legislation that must be met when land applying this material, including, but not limited to the *Biosecurity Act 2015* and *Biosecurity Regulation 2017*.

Failure to comply with the conditions of this exemption constitutes an offence under clause 91 of the Waste Regulation.



Resource Recovery Order under Part 9, Clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014

The Eco Guardians rapidly dehydrated food waste order June 2020

Introduction

This order, issued by the Environment Protection Authority (EPA) under clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014 (Waste Regulation), imposes the requirements that must be met by processors of rapidly dehydrated food waste from specified Eco Guardians units, to which 'the Eco Guardians rapidly dehydrated food waste exemption June 2020' applies. The requirements in this order apply to the supply of rapidly dehydrated food waste for application to land as a soil amendment.

1. Waste to which this order applies

- 1.1. This order applies to rapidly dehydrated food waste. In this order, rapidly dehydrated food waste means the dehydrated output from the mechanical mixing and heating of food waste produced by specified Eco Guardians units.

2. Persons to whom this order applies

- 2.1. The requirements in this order apply, as relevant, to any person who supplies rapidly dehydrated food waste that has been generated, processed or recovered by the person.
- 2.2. This order does not apply to the supply of rapidly dehydrated food waste to a consumer for land application at a premises for which the consumer holds a licence under the POEO Act that authorises the carrying out of the scheduled activities on the premises under clause 39 'waste disposal (application to land)' or clause 40 'waste disposal (thermal treatment)' of Schedule 1 of the POEO Act.

3. Duration

- 3.1. This order commences on 29 June 2020 and is valid until 28 June 2021 unless revoked by the EPA in writing at an earlier date.

4. Processor requirements

The EPA imposes the following requirements on any processor who supplies rapidly dehydrated food waste.

General conditions

- 4.1. On or before supplying rapidly dehydrated food waste, the processor must ensure that the rapidly dehydrated food waste:
 - 4.1.1. does not include grease trap waste or animal waste.

- 4.1.2. does not contain any physical contaminants, including but not limited to glass, metal, rigid or flexible plastics (including compostable plastics) or polystyrene.
- 4.1.3. is in a form and condition that is suitable for land application as a soil amendment.
- 4.1.4. has completed at least one full operational cycle by the specified unit.

Sampling requirements

- 4.2. On or before supplying rapidly dehydrated food waste, the processor must:
 - 4.2.1. Prepare a written sampling plan for the rapidly dehydrated food waste which includes a description of the input to the specific unit sampled, sample preparation, and storage procedures for the rapidly dehydrated food waste samples. The sampling plan must include the appropriate holding times for all tests including microbiological testing.
 - 4.2.2. Undertake sampling and testing of the rapidly dehydrated food waste as required under clause 4.3. The sampling must be carried out in accordance with the written sampling plan.
- 4.3. The processor must undertake characterisation of the rapidly dehydrated food waste by:
 - 4.3.1. collecting 10 composite samples and testing each sample for the chemicals and other attributes listed in Column 1 of Table 1. Each composite sample must be taken from a single batch that has not been previously sampled for the purposes of characterisation. A maximum of two composite samples must be collected per month. Characterisation must be conducted on the rapidly dehydrated food waste within 12 months following the commencement of the process¹; or
 - 4.3.2. an alternative sampling and testing program that is approved by the EPA.

Chemical and other material requirements

- 4.4. The processor must not supply rapidly dehydrated food waste to any person if, in relation to any of the chemical and other attributes of the rapidly dehydrated food waste:
 - 4.4.1. The concentration or other value of that attribute of any sample collected and tested as part of the characterisation of the rapidly dehydrated food waste exceeds the absolute maximum concentration or other value listed in Column 2 of Table 1.
- 4.5. The absolute maximum concentration or other value of that attribute in any rapidly dehydrated food waste supplied under this order must not exceed the absolute maximum concentration or other value listed in Column 2 of Table 1.

¹ Processors should note that further testing will be required after the first year. Further testing will be determined on the review of the results from the first year.

Table 1

Column 1	Column 2
Chemical and other attributes	Absolute maximum concentration¹ (% 'dry weight' unless otherwise specified)
1. <i>Salmonella</i> spp.	Absent in 25 grams
2. <i>Escherichia coli</i> (<i>E. coli</i>)	Absent at limit of detection (Most probable number per gram)
3. <i>Clostridium perfringens</i>	Absent at limit of detection (colony forming units per gram)
4. <i>Bacillus cereus</i>	Absent at limit of detection (colony forming units per gram)
5. Particle size >9.5 mm	0 % mass
6. Electrical conductivity	N/A ²
7. Sodium mg/kg	N/A ²
8. Moisture content percentage	10%
9. pH	N/A ²

¹Processors should note that holding times for some of these tests are short and processors should check with the laboratories before sampling. For example, some microorganism samples must be analysed within 24 hours of collection.

² While limits are not included for 6, 7 and 9, these must be tested in each sample and records kept of the results.

Test methods

- 4.6. The processor must ensure that any testing of samples required by this order is undertaken by analytical laboratories accredited by the National Association of Testing Authorities (NATA), or equivalent.
- 4.7. The processor must ensure that the chemical and other attributes (listed in Column 1 of Table 1) in the rapidly dehydrated food waste supplied are tested in accordance with the test methods specified below. Where an equivalent analytical method is used the detection limit must be equal to or less than the detection limit for the method given below.
- 4.7.1. Test method for the detection of *Salmonella*:
- 4.7.1.1. Australian Standard 5013.10-2009 Food microbiology - Microbiology of food and animal feeding stuffs - Horizontal method for the detection of *Salmonella* spp., or an equivalent analytical method.
- 4.7.1.2. Report as absent or present in 25 grams.
- 4.7.2. Test method for *E. coli*:
- 4.7.2.1. Australian Standard AS5013.15-2006 Food microbiology - Microbiology of food and animal feeding stuffs - Horizontal method for the detection and enumeration of presumptive. *Escherichia coli* - Most probable number (MPN) technique, or an equivalent analytical method.
- 4.7.2.2. Report as MPN / g.
- 4.7.3. Test method for *Clostridium perfringens*:
- 4.7.3.1. Australian Standard AS 5013.16-2006 Food microbiology – Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of *Clostridium perfringens* —Colony-count technique – colony forming units (CFU) technique, or an equivalent analytical method.
- 4.7.3.2. Report as CFU / g.

- 4.7.4. Test method for *Bacillus cereus*:
- 4.7.4.1. Australian Standard AS 5013.2-2007 Food microbiology - Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of *Bacillus cereus* - Colony-count technique at 30C - colony forming units (CFU) technique, or an equivalent analytical method.
- 4.7.4.2. Report as CFU / g.
- 4.7.5. Test method for measuring maximum particle size:
- 4.7.5.1. Analysis using Australian Standard AS4454-2012 Composts, soil conditioners and mulches, Appendix G – Method for Determination of Particle Size Grading.
- 4.7.5.2. Results must be reported as % by mass retained on a sieve with 9.5 mm apertures.
- 4.7.5.3. The entire sample must pass through the sieve.
- 4.7.6. Test method for electrical conductivity:
- 4.7.6.1. Analysis using Method 3A1 Electrical Conductivity (EC) of 1:5 soil/water extract from SOIL CHEMICAL METHODS – Australasia, Rayment and Lyons 2011.
- 4.7.6.2. Report in dS/m on an air-dry basis.
- 4.7.7. Test method for sodium:
- 4.7.7.1. Sample preparation using USEPA SW-846 Method 3050B Acid digestion of sediments, sludges, and soils.
- 4.7.7.2. Analysis using USEPA SW-846 Method 6010C Inductively coupled plasma – optical emission spectrometry.
- 4.7.7.3. Report as mg/kg.
- 4.7.8. Test method for moisture content:
- 4.7.8.1. Analysis using method Method 2A1 Air dry moisture content from SOIL CHEMICAL METHODS – Australasia, Rayment and Lyons 2011.
- 4.7.8.2. Report as %.
- 4.7.9. Test method for pH:
- 4.7.9.1. Prepare sample by mixing one part of rapidly dehydrated food waste with 5 parts of water using analysis method 4A1 pH of 1:5 soil/water suspension from SOIL CHEMICAL METHODS – Australasia, Rayment and Lyons 2011, or an equivalent analytical method.
- 4.7.9.2. Report as pH on an air-dry basis.

Notification

- 4.8. On or before each transaction, the processor must provide the following to each person to whom the processor supplies the rapidly dehydrated food waste:
- a written statement of compliance certifying that all the requirements set out in this order have been met;
 - a copy of “the Eco Guardians rapidly dehydrated food waste exemption June 2020”, or a link to the EPA website where the exemption can be found; and
 - a copy of “the Eco Guardians rapidly dehydrated food waste order June 2020”.

Record keeping and reporting

- 4.9. The processor must keep a written record of the following for a period of six years:
- the sampling plan required to be prepared under clause 4.2.1;
 - all test results in relation to the rapidly dehydrated food wastes supplied;
 - the quantity of any rapidly dehydrated food waste supplied; and

- the name and address of each person to whom the processor supplied the rapidly dehydrated food waste.
- 4.10. The processor must notify the EPA within seven days of becoming aware that it has not complied with any requirement in clauses 4.1- 4.5.

5. Definitions

In this order:

animal waste means dead animals and animal parts and any mixture of dead animals and animal parts².

application or apply to land means applying to land by:

- spraying, spreading or depositing on the land;
- ploughing, injecting or mixing into the land; or
- filling, raising, reclaiming or contouring the land.

consumer means a person who applies, or intends to apply, rapidly dehydrated food waste to land.

composite sample means a sample that combines five discrete sub-samples of equal size into a single sample for the purpose of analysis.

food waste means food waste from the manufacture, preparation, sale or consumption of food but does not include grease trap waste or animal waste.

grease trap waste means any grease, oils, solids, water or other matter resulting only from the preparation or manufacturing of food that is collected in a grease trap in the usual course of the operation of the grease trap. This definition includes dissolved air flotation (DAF) units used to treat grease trap waste, but does not include grease trap waste collected from grease traps in hospitals and shopping centres other than those solely from the preparation of food.

specified Eco Guardians unit means the “GaiaRecycle Process” units by Eco Guardians Pty Ltd. The “GaiaRecycle Process” unit is a closed circuit vessel that operates with agitation, vapour recirculation system and minimum internal temperature of 100°C (achieved by way of a jacketed external oil chamber maintained at 165 to 180°C) for a minimum of 7 hours.

processor means a person who processes rapidly dehydrated food wastes for supply to a consumer.

transaction means:

- in the case of a one-off supply, the supply of a batch, truckload or stockpile of rapidly dehydrated food waste that is not repeated.
- in the case where the supplier has an arrangement with the recipient for more than one supply of rapidly dehydrated food waste, the first supply of rapidly dehydrated food waste as required under the arrangement.

Approved

Director Environmental Solutions (CLR)

Environment Protection Authority

(by delegation)

² see Notes section for guidance

Notes

The EPA may amend or revoke this order at any time. It is the responsibility of the processor to ensure it complies with all relevant requirements of the most current order.

In gazetting or otherwise issuing this order, the EPA is not in any way endorsing the supply or use of this substance or guaranteeing that the substance will confer benefit.

The conditions set out in this order are designed to minimise the risk of potential harm to the environment, human health or agriculture, although neither this order nor the accompanying exemption guarantee that the environment, human health or agriculture will not be harmed.

While this order requires that the rapidly dehydrated food waste must not contain physical contaminants including but not limited to glass, metal, rigid and flexible plastics (whether compostable or not) or polystyrene, the EPA recognises that the rapidly dehydrated food waste may contain extremely low or incidental amounts of physical contaminants. The processor must implement procedures to prevent the presence of physical contaminants in the rapidly dehydrated food waste. These procedures must be formally documented and their implementation demonstrated. However, as noted in this order, the rapidly dehydrated food waste must not contain any grease trap waste or animal waste.

Animal waste is defined as dead animals and animal parts and any mixture of these. Under the food waste definition in this order, it is intended that for example, meat waste from commercial kitchens and plate scrapings would be considered as food waste. However, animal carcasses or parts of animals from an animal slaughtering process are excluded.

Regardless of any exemption or order provided by the EPA, the person who causes or permits the application of the substance to land must ensure that the action is lawful and consistent with any other legislative requirements including, if applicable, any development consent(s) for managing operations on the site(s).

The supply of rapidly dehydrated food waste remains subject to other relevant environmental regulations in the POEO Act and Waste Regulation. For example, a person who pollutes land (s. 142A) or water (s. 120), or causes air pollution through the emission of odours (s. 126), or does not meet the special requirements for asbestos waste (Part 7 of the Waste Regulation), regardless of this order, is guilty of an offence and subject to prosecution.

This order does not alter the requirements of any other relevant legislation that must be met in supplying this material, including, but not limited to the *Biosecurity Act 2015* and *Biosecurity Regulation 2017*.

Failure to comply with the conditions of this order constitutes an offence under clause 93 of the Waste Regulation.



Resource Recovery Exemption under Part 9, Clauses 91 and 92 of the Protection of the Environment Operations (Waste) Regulation 2014

The Eco Guardians rapidly dehydrated food waste exemption June 2020

Introduction

This exemption:

- is issued by the Environment Protection Authority (EPA) under clauses 91 and 92 of the Protection of the Environment Operations (Waste) Regulation 2014 (Waste Regulation); and
- exempts a consumer of rapidly dehydrated food waste produced by specified Eco Guardians units from certain requirements under the Protection of the Environment Operations Act 1997 (POEO Act) and the Waste Regulation in relation to the application of rapidly dehydrated food waste to land, provided the consumer complies with the conditions of this exemption.

This exemption should be read in conjunction with 'the Eco Guardians rapidly dehydrated food waste order June 2020'.

1. Waste to which this exemption applies

- 1.1. This exemption applies to rapidly dehydrated food waste processed in the specified Eco Guardians units, which is, or is intended to be, applied to land as a soil amendment.
- 1.2. Rapidly dehydrated food waste means the dehydrated output from the mechanical mixing and heating of food waste produced by specified Eco Guardians units.

2. Persons to whom this exemption applies

- 2.1. This exemption applies to any person who applies, or intends to apply, rapidly dehydrated food waste to land as set out in 1.1.

3. Duration

- 3.1. This exemption commences on 29 June 2020 and is valid until 28 June 2021 unless revoked by the EPA by notice published in the Government Gazette at an earlier date.

4. Premises to which this exemption applies

- 4.1. This exemption applies to premises at which the consumer's actual or intended application of rapidly dehydrated food waste is carried out.

5. Exemption

- 5.1. Subject to the conditions of this exemption, the EPA exempts each consumer from the following provisions of the POEO Act and the Waste Regulation in relation to the consumer's actual or intended application of rapidly dehydrated food waste to land as a soil amendment at the premises:
- section 48 of the POEO Act in respect of the scheduled activities described in clauses 39 and 42 of Schedule 1 of the POEO Act;
 - Part 4 of the Waste Regulation;
 - section 88 of the POEO Act; and
 - clause 109 and 110 of the Waste Regulation.
- 5.2. The exemption does not apply in circumstances where rapidly dehydrated food waste is received at the premises for which the consumer holds a licence under the POEO Act that authorises the carrying out of the scheduled activities on the premises under clause 39 'waste disposal (application to land)' or clause 40 'waste disposal (thermal treatment)' of Schedule 1 of the POEO Act.

6. Conditions of exemption

The exemption is subject to the following conditions:

General conditions

- 6.1. At the time the rapidly dehydrated food waste is received at the premises, the material must meet all chemical and other material requirements which are required on or before the supply of rapidly dehydrated food waste under 'the Eco Guardians rapidly dehydrated food waste order June 2020'.
- 6.2. The rapidly dehydrated food waste can only be applied to land as a soil amendment on agricultural land, home gardens and for the purposes of landscaping. Food crops, where the harvested parts touch or are below the surface of the land, must not be grown at the land application site for 90 days after each application of rapidly dehydrated food waste.
- 6.3. The rapidly dehydrated food waste must not be land applied at high public contact sites, such as childcare centres and children's playgrounds¹.
- 6.4. The rapidly dehydrated food waste must be incorporated into the topsoil at the time of application.
- 6.5. The rapidly dehydrated food waste can be used as an input material at the start of a composting process as defined in 'the Compost Order 2016'.
- 6.6. The consumer must make any records required to be kept under this exemption available to authorised officers of the EPA on request.

Preventing leaching and exposure to vectors

- 6.7. The consumer must ensure that the rapidly dehydrated food waste is appropriately contained prior to land application and when applying it to land, such that leaching or runoff from rapidly dehydrated food waste is prevented.

¹The purpose of this condition is to avoid hand-to-mouth contact with soil in which rapidly dehydrated food waste has been applied, especially for children and other vulnerable members of the community.

- 6.8. The consumer must ensure minimal risk of exposure to and transfer of pathogenic materials from the site by vectors (animals, birds and insects).
- 6.9. The consumer must ensure that any application of rapidly dehydrated food waste to land occurs within a reasonable period of time after its receipt.

Livestock related

- 6.10. The consumer must not allow rapidly dehydrated food waste to be fed to or come into contact with pigs or ruminants in accordance with clauses 37 and 38 of the *Biosecurity Regulation 2017*.
- 6.11. The consumer must apply a livestock-withholding period of 90 days following the land application of rapidly dehydrated food waste.

Additional agricultural conditions

- 6.12. When used on agricultural land, the consumer must calculate application rates prior to the application of the rapidly dehydrated food waste to land. The application rates must be equal to or less than the rate for the most limiting factor.
- 6.13. Where rapidly dehydrated food waste is intended to be land applied within 4 weeks of any other exempted waste, an investigation to determine the suitability of the proposed application must be undertaken prior to the waste being received at the application site. A report must be prepared including, but not necessarily limited to, information detailing how the receiving site will benefit from multiple wastes being applied, how the matrices and constituents of the different wastes will interact, and what application rates will be appropriate to minimise the potential for environmental harm. The investigation should determine whether the land application will deliver a net benefit. Where a net benefit is not demonstrated the land application of rapidly dehydrated food waste must not proceed. A written record of the report must be kept for a minimum period of three years.
- 6.14. When used on agricultural land, the consumer must keep a written record of the following for a period of six years:
 - the quantity of any rapidly dehydrated food waste received; and
 - the name and address of the supplier of the rapidly dehydrated food waste received.

7. Definitions

In this exemption:

agricultural land means land where the current or future use is for the purposes of agriculture which includes horticulture, turf and any purpose of husbandry. This includes keeping or breeding livestock, poultry or bees, and growing fruit, vegetables, field crops or pastures.

animal waste means dead animals and animal parts and any mixture of dead animals and animal parts.

application or apply to land means applying to land by:

- spraying, spreading or depositing on the land; or
- ploughing, injecting or mixing into the land; or
- filling, raising, reclaiming or contouring the land.

consumer means a person who applies, or intends to apply, rapidly dehydrated food waste to land.

ruminant means an animal that has a rumen including, but not limited to, alpacas, camels, cattle, deer, goats and sheep as defined in Clause 3(1) Part 1 of the *Biosecurity Regulation 2017*.

food waste means food waste from the manufacture, preparation, sale or consumption of food but does not include grease trap waste or animal waste.

high public contact sites means land with a high potential for soil to mouth contact by the public, particularly children, including childcare centres and playgrounds.

specified Eco Guardians unit means the “GaiaRecycle Process” units by Eco Guardians Pty Ltd. The “GaiaRecycle Process” unit is a closed circuit vessel that operates with agitation, vapour recirculation system and minimum internal temperature of 100⁰C (achieved by way of a jacketed external oil chamber maintained at 165 to 180⁰C) for a minimum of 7 hours.

processor means a person who produces rapidly dehydrated food waste for supply to a consumer from the specified units in this exemption.

Approved

Director Environmental Solutions (CLR)

Environment Protection Authority

(by delegation)

Notes

The EPA may amend or revoke this exemption at any time. It is the responsibility of the consumer to ensure they comply with all relevant requirements of the most current exemption. The current version of this exemption will be available on www.epa.nsw.gov.au

In gazetting or otherwise issuing this exemption, the EPA is not in any way endorsing the use of this substance or guaranteeing that the substance will confer benefit.

The conditions set out in this exemption are designed to minimise the risk of potential harm to the environment, human health or agriculture, although neither this exemption nor the accompanying order guarantee that the environment, human health or agriculture will not be harmed.

Animal waste is defined as dead animals and animal parts and any mixture of these. Under the food waste definition in this exemption, it is intended that for example, meat waste from commercial kitchens and plate scrapings would be considered as food waste. However, animal carcasses or parts of animals from an animal slaughtering process are excluded.

Rapidly dehydrated food waste is a dehydrated material from the mechanical mixing and heating of food waste and is **not** the same as compost. Consumers should note that re-wetting of rapidly dehydrated food waste will encourage growth of organisms that may remain in a dormant state after the process is completed. The output itself will sustain the growth of organisms, including pathogenic organisms, which are introduced from the receiving environment. Rewetting will also commence the usual decomposition process that occurs with all organic waste and has the potential to generate offensive odours.

Note that food crop restrictions apply in this exemption to prevent the transmission of pathogenic organisms from the soil to food. Food crops that when harvested come into contact with the soil such as carrots, potatoes, lettuces and leafy herbs, must not be grown in soil where dehydrated food waste has been land applied for a period of less than 90 days after each application. However, the output material may be used for the growing of fruit or nut trees or vines at any time after land application but not where fallen produce is or may be collected off the ground within 90 days of application.

Rapidly dehydrated food waste may be acidic and contain high levels of sodium and other salts. The consumer should assess whether or not the rapidly dehydrated food waste is fit for the purpose for which it is proposed to be used, and whether this use will cause harm. The consumer may need to seek expert technical advice.

As rapidly dehydrated food waste is dry and may contain powdery particles, care should be taken to reduce dust during handling and application.

Regardless of any exemption provided by the EPA, the person who causes or permits the application of the substance to land must ensure that the action is lawful and consistent with any other legislative requirements including, if applicable, any development consent(s) for managing operations on the site(s).

The receipt of rapidly dehydrated food waste remains subject to other relevant environmental regulations in the POEO Act and the Waste Regulation. For example, a person who pollutes land (s. 142A) or water (s. 120), or causes air pollution through the emission of odours (s. 126), or does not meet the special requirements for asbestos waste (Part 7 of the Waste Regulation), regardless of having an exemption, is guilty of an offence and subject to prosecution.

This exemption does not alter the requirements of any other relevant legislation that must be met when land applying this material, including, but not limited to the *Biosecurity Act 2015* and *Biosecurity Regulation 2017*.

Failure to comply with the conditions of this exemption constitutes an offence under clause 91 of the Waste Regulation.