

**WAS-G-DEF-07**

**End-of-waste for digestate**

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Purpose

This guidance sets out the end-of-waste criteria for digestate produced from the anaerobic digestion of waste.

## End-of-waste criteria

When sold and dispatched from the site to the end-user for a certain use, digestate meeting the following criteria will cease to be waste:

* Digestate is produced from source segregated biowastes and/or source segregated biodegradable materials listed in Annex 1 only.
* The anaerobic digestion process and any digestate produced is certified to the standards contained in BSI PAS110:2014 Producing Quality Anaerobic Digestate, the Additional Scheme Rules for Scotland and the additional quality standards in Table 1.

**Table 1: Additional quality standards**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Total Nitrogen (N) (kg/t) | <1 | 1-1.9 | 2-2.9 | 3-3.9 | 4-4.9 | 5-5.9 | 6-6.9 | 7-7.9 | 8-8.9 | >9 |
| Total Plastic (g/t) | 3.2 | 5.6 | 8.8 | 11.2 | 14.4 | 17.6 | 20 | 23.2 | 25.6 | 28.8 |

* The certification process must be carried out by a third party accredited by the United Kingdom Accreditation Service.
* The digestate must meet PAS110:2014 without having to be blended with any other materials including other composts, digestates, materials, products or additives.
* The digestate must not require any further processing or recovery operations prior to use. Use as a ‘raw material’ in a manufacturing/blending process is acceptable providing the digestate is not mixed with waste.

## Waste acceptance

The producer must have in place ‘waste acceptance criteria’ to ensure that only wastes listed in Annex 1 are accepted for anaerobic digestion.

Steps must have been taken to exclude contamination from the feedstock. This includes invasive plant species such as Giant Hogweed, Japanese Knotweed, Himalayan Balsam and toxic species such as Ragwort and Yew.

Remove packaging that is not independently certified as industrially or home compostable (or both). Packaging that is independently certified as compliant with at least one of the following can go forward for anaerobic digestion:

* EN 13432.
* EN 14995.
* ASTM D6400.
* EN 17427.
* AS 5810-2010.
* NF T51-800.
* TUV Austria’s certification requirements for home compostable packaging under their “OK compost HOME scheme”.

Only untreated wood is allowed. Wood and wood-derived wastes impregnated with preservatives, painted, or with any non-biodegradable layer shall not be permitted.

## Outputs of anaerobic digestion (AD) of agricultural wastes

Agricultural manures and slurries are not waste when used directly on agricultural land but are waste when used in a composting or biogas (AD) plant.

However, digestate produced from manure and slurry can have beneficial fertilising properties and may have a lower environmental impact than undigested manure and slurry.

SEPA considers digestate to have ceased to be waste without certification to PAS110:2014 where the feedstock to the AD plant is agricultural manure and slurry only or is only mixed with non-waste feedstock e.g. crops grown specifically for AD.

If the manure and slurry feedstock is mixed with other waste feedstocks, e.g. animal feed and green waste including any crops not specifically grown for AD such as discarded vegetables and excess silage, then the resultant digestate will be regulated as waste unless it meets the end-of-waste criteria set out above.

## Use of digestate

Digestate must only be used in the right quantity, at the right time of year and with the right frequency of application to deliver the desired crop need or agricultural benefit. The use of the digestate must comply with all other regulatory controls and in accordance with best practice. For use in agriculture, such requirements include:

* Diffuse Pollution General Binding Rule 18: Fertiliser storage and application.
* Prevention of Environmental Pollution from Agricultural Activity Code of good practice (PEPFAA code).
* Nitrate Vulnerable Zones Regulations (NVZ regulations).

## Record keeping

Producers must retain records of all testing and of each sale of digestate. This should include the following:

* Date of supply.
* Customer’s name, contact details and nature of business.
* Quantity supplied by weight/volume.
* The specification with which the digestate complies.
* A statement that the digestate was produced in compliance with this guidance.

## Loss of product status

Digestate meeting these end-of-waste criteria will become waste again if at any stage:

* It is discarded, or the holder intends to or is required to discard it.
* It is applied in excess of soil and crop requirements.
* It is stored indefinitely with little prospect of being used.

This applies to anyone holding stores of digestate, not just producers.

## Annex 1 – Wastes acceptable to produce digestate

| **EWC Code** | **Description** |
| --- | --- |
|  | **Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing, food preparation and processing** |
| 02 01 01 | Sludges from washing and cleaning − vegetables, fruit and other crops |
| 02 01 02 | Animal tissue waste – including Category 3 and 3 fish morts without prior processing |
| 02 01 03 | Plant tissue waste - including straw, other crop residues, riverine vegetation and spent growing media based on plant issues such as compost derived from source-segregated biodegradable waste, peat and bark. |
| 02 01 06 | Animal faeces, urine and manure (including spoiled fully biodegradable bedding) |
| 02 01 07 | Waste from forestry – plant tissue waste only |
| 02 01 99 | Wastes not otherwise specified – spent mushroom compost or discarded mushrooms from commercial mushroom growing only |
|  | **Wastes from the preparation and processing of meat, fish and other foods of animal origin** |
| 02 02 01 | Sludges from washing and cleaning, peeling, centrifuging and separation including wash waters and sludges from secondary food processing or the cook chill sector |
| 02 02 02 | Animal tissue waste – may include blood and animal gut contents |
| 02 02 03 | Material unsuitable for consumption or processing - may include gut contents, shells and shellfish wastes. Includes sludges from gelatine production |
| 02 02 04 | Sludges from on-site effluent treatment |
|  | **Wastes from fruit, vegetables, cereals, edible oils, cocoa, coffee, tea and tobacco preparation and processing, conserve production, yeast and yeast extract production, molasses preparation and fermentation** |
| 02 03 01 | Sludges from washing, cleaning peeling, centrifuging and separation from food processing only |
| 02 03 04 | Materials unsuitable for consumption or processing - biodegradable waste only. Allowed only if no chemical additives or toxin residues present |
| 02 03 05 | Sludges from on-site effluent treatment or processing sludge from production of edible fats and oils including seasoning residues |
|  | **Wastes from sugar processing** |
| 02 04 03 | Sludges from on-site effluent treatment - biological sludge only |
|  | **Wastes from the dairy products industry** |
| 02 05 01 | Materials unsuitable for consumption or processing - including raw milk |
| 02 05 02 | Sludges from on-site effluent treatment |
|  | **Wastes from the baking and confectionary industry** |
| 02 06 01 | Materials unsuitable for consumption or processing - biodegradable waste only |
| 02 06 03 | Sludges from on-site effluent treatment |
|  | **Wastes from the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa)** |
| 02 07 01 | Wastes from washing, cleaning and mechanical reduction of raw materials – biodegradable wastes from the processing of the raw materials used in the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa) |
| 02 07 02 | Wastes from spirits distillation – spent grains, hops and whisky filter sheets and cloths, yeast and yeast like residues, sludge from production process, or malt husks, malt sprouts, yeasts and yeast-like residues only |
| 02 07 04 | Material unsuitable for consumption or processing – biodegradable wastes from the processing of the raw materials used in the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa) |
| 02 07 05 | Sludges from on-site effluent treatment – sludges from the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa) |
|  | **Wastes from wood processing and the production of panels and furniture, pulp, paper and cardboard** |
| 03 01 01 | Waste bark and cork - virgin timber only |
| 03 01 05 | Sawdust, shavings, cuttings, wood and particle board other than those in 03 01 04 only – untreated wood only |
|  | **Wastes from pulp, paper, and cardboard production and processing** |
| 03 03 01 | Waste bark and wood – virgin timber only |
| 03 03 10 | Fibre rejects – virgin timber only |
| 03 03 11 | Sludges from on-site effluent treatment other than those mentioned in 03 03 10. Only allowed if not mixed with or does not contain, de-inking sludge. |
|  | **Leather and fur industry** |
| 04 01 01 | Fleshings and lime split wastes. Only allowed if hides and skins, or part of them, originating from animals that did not show signs of any disease communicable through that product to animals or humans are digested in accordance with the ABPR at a facility subject to approval under ABPR. |
| 04 01 05 | Tanning liquor free from chromium |
| 04 01 07 | Sludges, in particular from on-site effluent treatment, free from chromium |
|  | **Wastes from the textile industry** |
| 04 02 10 | Organic matter from natural products such as grease and wax – biodegradable waste only |
| 04 02 21 | Wastes from unprocessed textile fibres – biodegradable waste only |
|  | **Waste from organic chemical processes** |
| 07 01 08 | Glycerol waste from biodiesel manufacture from non-waste vegetable oils only |
| 07 07 12 | Sludges from on-site biological effluent treatment other than those mentioned in 07 07 11. Biodegradable waste only |
|  | **Waste from the manufacture, formulation, supply and use of plastics, synthetic rubber and man-made, fibres** |
| 15 01 01 | Paper and cardboard packaging (excluding veneers, plastic coatings or laminates) certified to a relevant compostable standard. |
| 15 01 03 | Wooden packaging – virgin timber only |
| 15 01 05 | Composite packaging – certified to a relevant compostable standard |
|  | **Wastes not otherwise specified in the list** |
| 16 10 02 | Aqueous liquid wastes other than those mentioned in 16 10 01 - Milk and Dairy waste milk from agricultural premises only. Digestate or liquor from an anaerobic process that accepts only waste input types allowed by this guidance. Liquor or leachate from a composting process that accepts waste input types listed in this guidance only and in compliance with Animal By-Products Regulations. Untreated wash waters from cleaning fruit and vegetables on farm only |
|  | **Wastes from physico-chemical treatment of wastes** |
| 19 02 03 | Premixed wastes composed only of non-hazardous wastes - only if derived solely from input types allowed by this guidance and remains segregated from, and uncontaminated by any other waste type. |
| 19 02 06 | Sludges from physico/chemical treatment other than those mentioned in 19 02 05 - only if derived solely from physical treatment and/or pH adjustment of input types allowed by this guidance and remains segregated from, and uncontaminated by, any other waste type. |
| 19 02 10 | Glycerol not designated as hazardous – excludes 19 02 08 |
|  | **Wastes from aerobic treatment of solid wastes** |
| 19 05 01 | Non-composted fraction of municipal and similar wastes - from composting process that accepts only wastes as listed in this guidance and remains segregated from, and uncontaminated by, any other waste type. |
| 19 05 02 | Non-composted fraction of animal and vegetable waste - from composting process that only accepts wastes as listed in this guidance and remains segregated from, and uncontaminated by, any other waste type. |
| 19 05 03 | Off-specification compost - from composting process that only accepts wastes as listed in this guidance. This includes oversize material resulting from screening such compost. |
|  | **Wastes from anaerobic treatment of solid wastes** |
| 19 06 03 | Liquor from anaerobic treatment of municipal waste - from a process that only accepts wastes listed in this guidance, independently certified as complying with BSI PAS 110 and the Scottish Scheme rules. Includes previously pasteurised and stabilised batches only and in compliance with Animal and Plant Health Agency approval. Wastes shall not contain wastes derived from mechanical biological treatment facilities. |
| 19 06 04 | Digestate from anaerobic treatment of municipal waste - from a process that only accepts wastes listed in this guidance, independently certified as complying with BSI PAS 110 and the Scottish Scheme rules. Includes previously pasteurised and stabilised batches only and in compliance with Animal and Plant Health Agency approval. Wastes shall not contain wastes derived from mechanical biological treatment facilities. |
| 19 06 05 | Liquor from anaerobic treatment of animal and vegetable waste from a process that only accepts wastes listed in this guidance, independently certified as complying with BSI PAS 110 and the Scottish Scheme rules. Includes previously pasteurised and stabilised batches only and in compliance with Animal and Plant Health Agency approval. Wastes shall not contain wastes derived from mechanical biological treatment facilities. |
| 19 06 06 | Digestate from anaerobic treatment of animal and vegetable waste from a process that only accepts wastes listed in this guidance, independently certified as complying with BSI PAS 110 and the Scottish Scheme rules. Includes previously pasteurised and stabilised batches only and in compliance with Animal and Plant Health Agency approval. Wastes shall not contain wastes derived from mechanical biological treatment facilities. |
|  | **Wastes from wastewater treatment plants not otherwise specified** |
| 19 08 09 | Grease and oil mixture from oil and water separation containing only edible oils and fats |
| 19 08 12 | Sludges from biological treatment of industrial wastewater (from a process that treats wastes which listed in this guidance |
|  | **Wastes from the mechanical treatment of waste** |
| 19 12 01 | Paper and cardboard (excluding veneers or plastic coatings) certified to a relevant compostable standard |
| 19 12 12 | Other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11 - only if derived solely from input types allowed by this guidance and remains segregated from, and uncontaminated by, any other waste type |
|  | **Municipal waste (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions** |
| 20 01 01 | Paper and cardboard (excluding non-biodegradable coatings or preservatives such as veneers, plastic coatings or laminates) certified to a relevant compostable standard |
| 20 01 08 | Biodegradable kitchen and canteen waste |
| 20 01 25 | Edible oil and fat |
|  | **Garden and park wastes (including cemetery waste)** |
| 20 02 01 | Biodegradable waste - Manure, garden waste, green waste, horticultural waste, plant tissue, parks and garden waste, hedge and tree trimmings, grass cuttings and leafy materials. Waste types in this section allowed if biodegradable material only, with no chemical additives and no toxic residues present. Excludes road sweeping, gully waste and dog faeces. The waste must not contain invasive non-native species such as Japanese Knotweed or toxic species such as Yew or ragwort. |
|  | **Other municipal wastes** |
| 20 03 01 | Mixed municipal waste - separately collected biodegradable wastes otherwise allowed by this guidance only. If former foodstuffs are packaged, packaging must be certified to a relevant compostable standard. |
| 20 03 02 | Waste from markets allowed only if source segregated biodegradable fractions only. If former foodstuffs are packaged, packaging must be certified to a relevant compostable standard. |