

Introduction

The Environment Agency regularly receives end of waste enquiries and submissions for compost oversize material for use as a non-waste fuel. This material poses particular challenges when trying to determine end of waste status, particularly the comparison with virgin materials. This note highlights the challenges and explains our approach to enquiries.

Compost oversize is the waste left over from the production of compost and materialises after the final screening of the compost material. It contains a range of woody materials often including non-biodegradable material such as plastic.

The end of waste test

The end of waste test is the test used to assess whether a waste has met the strict criteria to be regarded as a non-waste material. One part of the end of waste test requires that a waste must pose no worse environmental effects when compared to the material that it replaces. The non-waste material that is replaced and that is compared against is known as the comparator material.

Assessing this part of the test requires an understanding of all potential contaminants in the waste derived material and the comparator. If the potential risks from one or both materials are not understood it will not be possible to conclude that there is no worse effect in using the waste derived material when compared with the comparator. Compositional analysis will need to be carried out in order to make such a comparison.

Comparing compost oversize with virgin wood

Information to date demonstrates that the chemical composition of compost oversize is not the same as virgin wood. Compost oversize can also contain a range of physical contaminants such as plastics and stones. Additionally, the concentration of some substances including metals such as copper, lead, chromium and arsenic can often be higher in compost oversize than in virgin wood. This evidence suggests that this is due to treated waste wood and other unsuitable wastes contaminating the composting process. The Environment Agency has had no submissions for end of waste where the compost oversize compares equally or favourably with virgin wood.

Hazard scoping

Before undertaking compositional analysis it is important to understand all the potential contaminants that may be present within compost oversize. Understanding the potential sources and types of contaminants will inform the suite of testing that is then undertaken. Substances that are often present in compost oversize include: pesticides, herbicides, PAHs, plastic, stones and chlorine and these should always be part of the compositional analysis. Additionally, understanding the concentration of metals within the oversize is important and metals of interest include: Hg, Cd, Ti, Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V though this list is not exhaustive. A hazard scoping exercise will involve looking at all possible contaminants that may be present and investigating specifically what to test for based on this.

Compositional analysis

Compositional analysis is an essential part of determining whether waste materials meet the end of waste test. The compositional analysis of compost oversize must include all contaminating substances that are

likely to be present in the incoming waste. It is not sufficient to restrict the analysis to a narrow range of metals, for example PAS100 metals. Instead the scope of the compositional analysis should be based on the hazard scoping exercise looking at the potential for contaminants based on the waste inputs.

Once the suite of substances for analysis has been identified, they must be tested for using an appropriate test. A sufficient number of samples should be analysed to ensure that a statistically reliable dataset is gathered. The potential for variability in the incoming waste stream and the variability of the results that are collected will determine how many samples are necessary. You will need to be able to justify the number of samples taken and show how they are representative of the waste stream in terms of its variability. Gathering a dataset that is based on good hazard scoping and a sufficient number of samples will help to fully characterise the waste and allow a good comparison with the comparator material.

Assessing the risk of compost oversize as a non-waste fuel

Part of the end of waste test requires that the use of compost oversize as a fuel must not pose a risk to the environment or human health that is greater than use of virgin wood as a fuel. This assessment is undertaken by way of comparison with a comparator material. If fully characterised compost oversize is compared with virgin wood and shows that the presence of contaminants are lower than or the same as those found in virgin wood then compost oversize would be likely to satisfy the no worse aspect of the end of waste test.

However, if compost oversize contains contaminants over and above those found in virgin wood, the risks of using it as a fuel would need to be further assessed. This involves demonstrating and justifying why higher levels of contaminants in compost oversize would not cause any worse environmental or human health effect when used as a fuel compared with virgin wood.

It would be extremely challenging to link higher contaminants with no worse environment effect. Measuring actual emissions to try to justify higher contaminate levels in compost oversize does not guarantee reliable data and is likely to be very expensive. Depending on the composition of the fuel and the conditions when it is burnt, the resulting ash will also vary. Whilst not immediately relevant to potential end of waste status for use of compost oversize as a fuel, it is a consideration for subsequent ash disposal or recovery purposes.

The Environment Agency's approach

We will continue to review any compost oversize end of waste submission in the usual way through the Definition of Waste panel. However before making a submission, the significant challenge faced by the end of waste assessment outlined above should not be underestimated. In order to make a future submission the online isitwaste assessment tool should be used. The tool takes the user through the relevant parts of the end of waste test and allows evidence to be uploaded to support the answers given. Following completion of the tool a submission can be sent to the Environment Agency for a view.

The key focus for addressing the challenges described here should be placed on reducing the contamination that enters the composting process in the first place and therefore improving the quality of the compost oversize. More robust checks and controls of waste inputs to screen out inappropriate waste types, plastic contamination etc will help address the associated issues arising later relating to compost oversize. By controlling the inputs effectively the quality of the compost oversize output is likely to improve.

Further information

More information about making an end of waste or by-product submission can be found here <https://www.gov.uk/guidance/turn-your-waste-into-a-new-non-waste-product-or-material#EOW>

Significant advice and guidance on risk assessment and making a submission is provided as part of the IsItWaste tool. <https://www.gov.uk/government/publications/isitwaste-tool-for-advice-on-the-by-products-and-end-of-waste-tests/isitwaste-tool-user-guide>

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