



Loss on Ignition Testing

SOCOTEC has provided clients with LOI testing services for many years, helping them to accurately determine how much naturally occurring material is present in their waste.

SOCOTEC's LOI analysis, carried out under UKAS accreditation*, ensures that any disposed material is done so in the most appropriate manner. Testing is carried out by subjecting the fines - small particles created through mechanical waste treatment processes – to extremely high temperatures. During this process, all organic matter is burned off, and the reduction of mass is calculated, indicating how much has been lost on ignition, hence LOI.

Why test LOI fines?

The LOI test is important for waste management organisations as, under current HMRC regulations, they must prove that they are classifying materials correctly and paying the appropriate amount of landfill tax. In April 2016, legislation came into force that put a 10% cap on LOI values in waste fines for those wishing to qualify for a lower (£2.90 per tonne of waste) tax bracket. Any fines that contain a higher LOI value are now subject to the significantly higher rate of £91.35 per tonne (correct for tax year 2019/20).

How to qualify for the reduced tax rate

To qualify for the reduced tax rate, companies need to have representative samples of fines tested under laboratory conditions in line with the most recent Government guidance. To help customers manage compliance across their sites, SOCOTEC provides a range of tests to help them accurately evaluate the chemical content of their waste and correctly classify it under UK law.

SOCOTEC's LOI process includes:

- Drying 1kg sample
- Creating 220g sub-sample
- Removing particles exceeding 20mm
- Grinding sub-samples to 2mm
- Oven drying 20g of the homogenous sample
- Transferring to a muffle furnace
- Cooling sample in a desicator
- Organic matter should now be burnt off
- Re-weighing sample
- Difference in weights is loss on ignition

SOCOTEC's accredited methods are compliant with both HMRC and Revenue Scotland requirements.

* A listing of SOCOTEC's UKAS accredited activities can be found in our schedule of accreditation – Testing Laboratory 0001 – at socotec.co.uk

MORE ABOUT OUR SERVICES

For more information on loss on ignition testing please call us on 0845 603 2112 or email salesuk@socotec.com

LOSS ON IGNITION TESTING EXPLAINED



Fines are small particles of refuse created as a by-product of mechanical waste treatment processes.

Fines containing more than **10%** organic matter are subject to a significantly higher landfill tax rate.

Landfill tax rates for fines

LOI of **10% or less**

£2.90* PERTONNE

* CORRECT FOR TAX YEAR 2019/20

LOI of **More than 10%**

£91.35* PERTONNE



THE TEST USED TO MEASURE THE LEVEL OR ORGANIC CONTENT OF FINES IS CALLED LOSS ON IGNITION (LOI)



How do we test for Loss on Ignition?

A **1 kg** sample of the fines is dried at **30-50°C** until a constant weight is achieved. From this a **200g** subsample is created



Particles exceeding **20mm** are removed and the new weight is recorded

The sub-sample is ground to a particle size of **2mm** or less to produce a homogenous sample



20mm

20g of the homogenous sample is placed in a dish and dried in an oven at **180°C** until a constant weight is achieved



The sample is transferred to a muffle furnace and heated to a temperature of **440°C** for a minimum of **5 hours**. It is then cooled in a desiccator



The sample is weighed for the final time. Any organic matter should now be burned off, and the difference between the final weight and its original mass is the Loss on Ignition figure.



SOCOTEC provides UKAS accredited (No. 0001) LOI testing services to companies across the waste management sector. If you require more information or advice on LOI tests please contact salesuk@socotec.com

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