DHI SOLUTION

CHARACTERISATION AND CLASSIFICATION OF WASTE AND SOIL

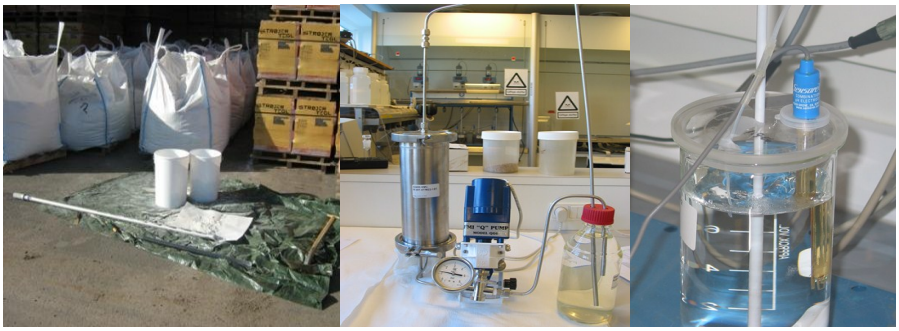
Enabling qualified decision-making on optimal waste and soil management

Characterisation and classification play an important role when you need to make a decision on the waste and soil management option that is most appropriate for you. You need to fully understand your material´s composition and behaviour in order to treat it optimally and handle it according to relevant legislations or other specific requirements. Waste characterisation and classification is an important decision support tool for you and we can assist you with all the relevant steps of the process.

FROM SAMPLING TO MATERIAL CHARACTERISATION

Waste streams can be characterised in terms of physical, chemical, biological, toxicological and eco-toxicological properties. A prerequisite for characterisation is a sample that is representative to the material and situation. Planning and performing sampling correctly may be a challenge, especially when dealing with a heterogeneous material such as waste.

We use our expertise to help you identify the most adequate sampling method and equipment for your specific needs, plan the sampling process, and even carry out the sampling for you.



We perform accredited sampling of waste and numerous leaching tests of different materials, such as waste, residues, soil, sediments, aggregates, construction products.

Characterisation often includes the determination of total content and may also include the measurement of the release of substances from the material. We carry out a number of characterisation leaching tests in-house and on a routine-basis.

These include:

- batch leaching tests
- up-flow percolation tests

SUMMARY

CLIENT

- Industries
- Waste treatment and disposal facilities
- Consultants and contractors
- Public sector

CHALLENGE

Inadequate data on material composition and classification, preventing you from:

- choosing the most appropriate waste management method
- developing or optimising treatment processes
- assessing environmental impacts of reuse or landfilling
- assessing the release of chemical substances from products or materials

SOLUTION

Sampling, testing and interpretation of results are the basis for characterisation and classification of the material in question and will help you gain adequate information. The results will help you choose the most optimal management option, improve treatment processes, and to assess environmental impacts and release of contaminants

VALUE

- Compliance with relevant regulations
- Potential costs savings (for example, by avoiding environmental fines)
- Enabling qualified decision-making on management options
- Increased safety when handling materials
- Reduced environmental risks
- Sound basis for impact and risk assessment

- tank tests
- pH-dependence tests
- leaching tests for organic parameters

Several of the tests that we perform, are carried out according to our accreditation by the Danish Accreditation Scheme (DANAK). We collaborate with various international laboratories that assist us with chemical analyses.

BIOACCESSIBILITY TESTING

We also perform bioaccessibility tests to simulate how much of a contaminant may be accessible to the human body. You can use these tests as tools in risk assessments to determine what level of pollution may be acceptable.

Column leaching tests performed on soil samples.

TEST FACILITIES

We can provide you with expert advice when it comes to planning tailor-made experiments, whether this is at lab-, pilot-, or field-scale. We have facilities that enable us to set-up and carry out specific experiments for your needs.

GUIDANCE ON THE CHOICE OF TEST

When it comes to choosing the correct leaching test, it's imperative to opt for an appropriate test method for the issue in question. One test method cannot answer all the relevant questions and it might be necessary to perform a number of different tests to obtain the necessary data.

When choosing a leaching test, we can guide you to help you find the answers to all your questions. Moreover, we can assist you with the interpretation of results from leaching tests.

SOLUTIONS TO HANDLE AND INTERPRET YOUR DATA

In conjunction with our collaboration partners, we've developed a database structure — the Leaching eXpert System (LeachXS). LeachXS is both a database and expert Decision Support System (DSS) for characterisation and assessment of environmental impact, based on estimated contaminant release as derived from leaching tests. Using LeachXS, we can assist you with interpreting the results of various leaching tests as well as estimate the long-term release of substances of interest.

Applicable materials include:

- industrial and hazardous wastes
- stabilised waste
- construction materials
- municipal waste
- soil and contaminated soil
- mining waste
- sediments

Barrels with waste.

CLASSIFICATION OF WASTE

The classification of waste is carried out according to objective criteria (for example, the source of the waste, its properties and so on). Characterisation and classification of waste can be done with different purposes and the material may therefore be subject to variable rules and legislations.

We can assist you with determining whether your material is:

- non-hazardous or hazardous waste
- fit for recycling or landfilling
- waste or product

We have experience with the characterisation and classification of waste and soil under several different legislative rules and can provide expert advice on meeting them.

GUIDANCE ON OPTIMAL WASTE AND SOIL MANAGEMENT

We provide our customers with guidance when it comes to choosing the most optimal waste and soil management. At DHI, we can help you evaluate your material with respect to:

- reusing/recycling in production
- reusing/recycling as raw material/resources in other types of production
- reusing/recycling in building and construction works
- achieving the end-of-waste (EoW) status by meeting EoW criteria and requirements
- assessing the release of chemical substances from products or materials
- alternative recycling based on environmental risk assessments
- documenting a treatment method's effectiveness
- landfilling

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