



Solid Recovered Fuels and Refuse Derived Fuels

TECHNICAL DATASHEET

The production of waste derived fuels for energy recovery has been a popular waste management option since the 1990's. Many waste fractions which cannot be easily reused or recycled, particularly if they are composed of materials that are difficult to properly sort or separate, may have a high caloric value that can be used in a fuel for energy recovery.

Solid recovered fuel (SRF) is a high quality alternative to fossil fuel produced from commercial waste including paper, card, wood, textiles and plastic with a calorific value between 17 – 22 MJ/kg.



With a moisture content of less than 15 % solid recovered fuel has a high calorific value and is used in facilities such as cement kilns. 1 tonne of coal is the equivalent to approximately 1.5 tonnes of SRF. Refuse derived fuel (RDF) is made from domestic waste which includes biodegradable material as well as plastics, and has a lower calorific value than solid recovered fuel. RDF is used in combined heat and power facilities, many of them in Europe where they produce electricity and hot water for communal heating systems in the local area. Many calorific wastes are referred to as refuse-derived fuel (RDF). But as the fuel compositional quality and type of fuels vary.

Compared to landfilling, the lower carbon emissions resulting from this approach to processing waste far outweigh the emissions associated with transporting the reclaimed fuel. To make handling waste derived fuel easier, a European standard has been created - CEN/TC 343 for 'solid recovered fuel' (SRF).

ALS Environmental UK are able to assist with your SRF and RDF requirements and are able to create bespoke suites of analysis to suit your needs.

SRF is a fuel produced from non-hazardous waste in compliance with the European standard EN 15359. The main requirement is that a producer specifies and classifies its SRF by detailing its net calorific value, Chlorine and mercury content of the fuel. Specification includes (as mandatory) several other properties, such as the content of all heavy metals mentioned in the Industrial Emissions Directive.

- Calorific Value
- Chlorine
- Sulphur
- Bromine
- Fluorine
- Carbon (C),
- Hydrogen (H)
- Nitrogen (N) content
- Major elements (Al, Ca, Fe, K, Mg, Na, P, Si, Ti)
- Trace elements (As, Ba, Be, Cd, Co, Cr, Cu, Hg, Mo, Mn, Ni, Pb, Sb, Se, Tl, V and Zn)
- Moisture content

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Using SRF instead of coal helps to preserve natural resources and limiting the reliance on expensive finite fossil fuels and reducing the impact on the environment through lower emissions. Materials that would be landfilled are recycled and put to better use as a sustainable fuel and SRF reduces the need to mine coal deposits and import into the United Kingdom.

ALS Environmental are able to provide full scope of RDF and SRF requirements, our 'Centre of Excellence' laboratory in Ceska Lipa, Czech Republic and to CEN standards if required.

Typical Recovered Fuels analysis requirements

Parametre	LOQ	Unit
Antimony as Sb, total	5	mg/kg
Arsenic as As, total	5	mg/kg
Cadmium as Cd, total	0.4	mg/kg
Chlorine total	0.01	%
Chromium as Cr, total	0.5	mg/kg
Cobalt as Co, total	0.5	mg/kg
Copper as Cu, total	0.5	mg/kg
Elemental analysis (N,C,S,H,O)	0.1	%
Grain size analysis	0.01	%
Gross & Net Calorific value	0.5	mg/kg
Lab compact bulk density	100	g/l
Lead as Pb, total	5	mg/kg
Manganese as Mn, total	0.05	mg/kg
Mercury as Hg, total	0.3	mg/kg
Nickel as Ni, total	0.5	mg/kg
Potassium as K, total	5	mg/kg
Sodium as Na, total	2	mg/kg
Vanadium as V, total	0.2	mg/kg
Zinc as Zn, total	0.5	mg/kg

References:
CEN 343 ANAS Standard

