

**SUP Biomass Fuel Specification**

All Values to be determined during final EPC Design phase.

18/12/2019

Description	Chemical Symbol	Units	Standard	Biomass Spec.	
				Min	Max
<b>Proximate Analysis</b>					
Total Moisture		% a.r.b.	EN 14774-1:2009	4	10
Ash		% a.r.b.	EN 14775:2009	0	2
Volatile Matter		% a.r.b.	EN 15148:2009	70	82
CV		Net MJ/Kg	EN 14918:2009 Net Calorific Value Constant Pressure	16.5	-
<b>Ultimate Analysis</b>					
Chlorine	Cl	% a.r.b.	EN 15289:2011	0	0.03
Sulphur	S	% a.r.b.	EN 15289:2011	0	0.08
Nitrogen	N	% a.r.b.	EN 15104:2011	0	0.3
Carbon					
Hydrogen					
<b>Trace Metals</b>					
Total: Antimony+Arsenic+Lead+Chromium+Cobalt+Copper+Manganese+Nickel+Vanadium					
Total: Cadmium+Thallium					
Antimony	Sb				
Arsenic	As	mg/Kg d.b.	EN 15297:2011	0	2
Aluminium	Al	mg/Kg d.b.	EN 15290:2011	0	875
Cadmium	Cd	mg/Kg d.b.	EN 15297:2011	0	1
Calcium	Ca	mg/Kg d.b.	EN 15290:2011	0	5700
Chromium	Cr	mg/Kg d.b.	EN 15297:2011	0	20
Cobalt	Co				
Copper	Cu	mg/Kg d.b.	EN 15297:2011	0	20
Iron	Fe	mg/Kg d.b.	EN 15290:2011	0	900
Lead	Pb	mg/Kg d.b.	EN 15297:2011	0	20
Magnesium	Mg	mg/Kg d.b.	EN 15290:2011	0	800
Manganese	Mn				
Mercury	Hg	mg/Kg d.b.	EN 15297:2011	0	0.1
Nickel	Ni	mg/Kg d.b.	EN 15297:2011	0	20
Phosphorous	P	mg/Kg d.b.	EN 15290:2011	0	255
Selenium	Se				
Silica	SiO2	mg/Kg d.b.	EN 15290:2011	0	3600
Sodium	Na	mg/Kg d.b.	EN 15290:2011	0	400
Tellurium	Te				
Thallium	Tl				
Tin	Sn	mg/Kg d.b.	EN 15297:2011	0	10
Titanium	Ti	mg/Kg d.b.	EN 15290:2011	0	125
Vanadium	V	mg/Kg d.b.	EN 15297:2011	0	20
Zinc	Z	mg/Kg d.b.	EN 15297:2011	0	40
<b>Ash Fusion</b>					
Shrinkage		Degrees C	DD CEN/TS 15370-1:2006 Test to be carried out in a reducing atmosphere		
Deformation		Degrees C			
Hemisphere		Degrees C			
Flow		Degrees C			
<b>Physical Properties</b>					
Tamped Bulk Density		Kg/M <sup>3</sup>	EN 15103:2009 Determination of Bulk Density	630	750
<b>DSEAR Information</b>					
Cloud Ignition Temperature		Degrees C	EN 13821:2002 or ASTM E 2019		
5mm Layer Ignition Temperature		Degrees C			
Min. Ignition Energy (MIE)		mJ (capacitive)			
Max. Explosion Pressure		Bar			
Specific Dust Constant (KSt)		Bar.m/sec			
Explosibility Rating (ST-0 Non-Explosive)		ST-__			
<b>Physical Characteristics</b>					
Diameter		mm	EN 16127:2012 Determination of length and diameter of pellets.		
Length		mm			
Biomass Content					
<b>Fines Content (Bulk Material)</b>					
EN 15210-1:2009 Section 6					
<b>Component Particle Size of Feedstock Used in Pellet Production</b>					
<b>Absolute</b>					
Sizing < 0.1 mm		%	EN 16126:2012 Determination of particle size distribution of disintegrated pellets. Sieving by EN 15149:2010 Determination of particle size distribution.		
Sizing < 0.5 mm		%			
Sizing < 4.0 mm		%			
Sizing < 10.0 mm		%			
Maximum Bulk Temperature		Degrees C	EN 15234-2 Monitoring QA Standard or Equivalent	<=60	
<b>Durability of Pellets</b>					
EN 15201-1:2009					