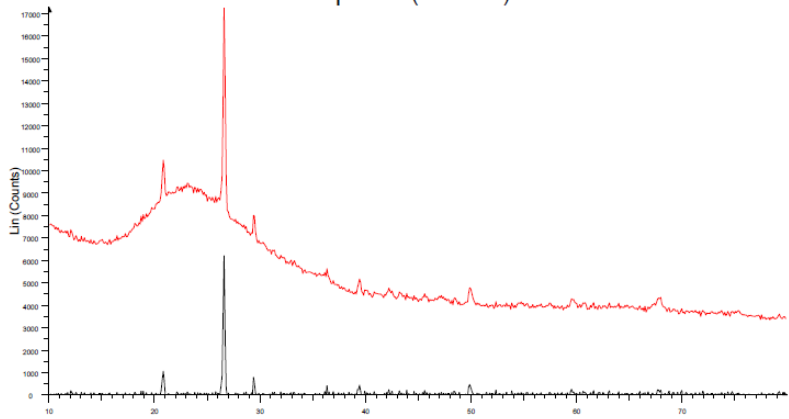
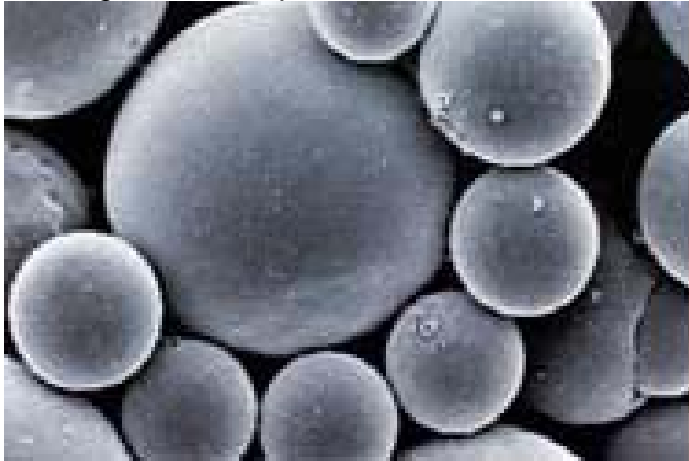


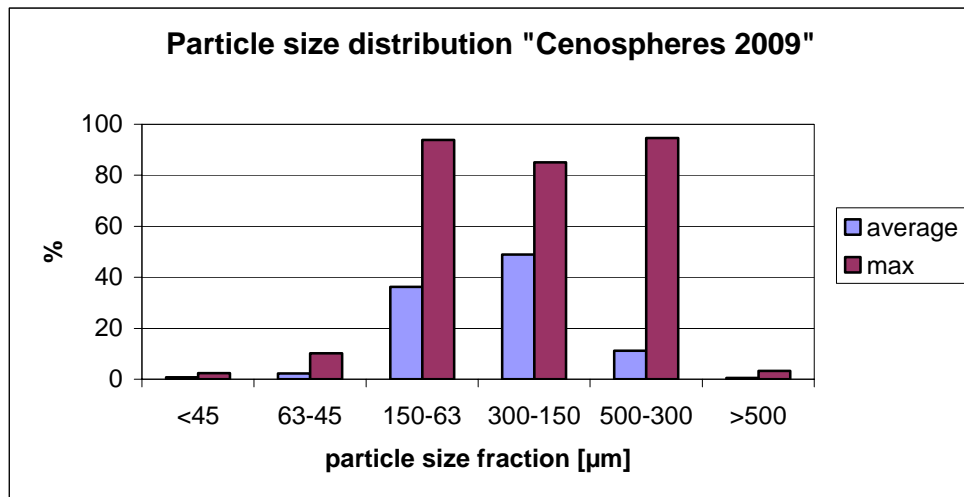
Substance identification in REACH: Rev. 02 (Feb 3, 2011)

2.	IDENTIFICATION OF THE SUBSTANCE, Cenospheres
2.1	Name or other identifier of substance
2.1.1	Cenospheres, Fly ash, alumo silicate
2.1.2	Cenospheres, fly ash
2.1.3	300-212-6
2.1.4	93924-19-7
2.1.5	Other identity code (if available), ISO or other standards: n.a.
2.2	Information related to molecular and structural formula of substance
2.2.1	$x \text{SiO}_2 \cdot y \text{Al}_2\text{O}_3$
2.2.2	Hollow ceramic microspheres of alumo silicate Cenospheres are hollow ceramic microspheres formed as a part of the ash in power stations burning pulverized coal. Cenospheres are the lighter particles that are contained within the fly ash and that are scooped up from ash ponds after wet disposal or recovered by other processes. Cenospheres comprises mostly of glassy aluminosilicate, minerals: quartz and mullite and contain carbon dioxide and nitrogen within the sphere.
2.2.3	n.a. due to complex nature
2.3	Composition of substance
2.3.1	glassy aluminosilicate + Quartz, UVCB
2.3.2	Impurities originating from raw material (coal)
2.3.3	Amorphous aluminosilicate: 50-95 % Fe ₂ O ₃ : 1-8 % TiO ₂ : 0-1.5 % Quartz: 0-6 % Mullite: 0-50 % Other trace elements (ppm) originating from the raw materials, not intentionally added
2.3.4	Nature and order of magnitude (...ppm,%) of any additives (e.g. stabilising agents or inhibitors): n.a.
2.3.5	XRD:  <small>016-36-n4Sum - File: B-36mindre4Sum.raw - Type: 2Th/Th locked - Start: 10.000 ° - End: 79.976 ° - Step: 0.100 ° - Step time: 184. s - Temp.: 25 °C (Room) - Time Started: 16 s - 2-Theta: 10.000 ° - Theta: 5.000 ° - Chi: 0 Options: Import 016-36-n4Sum - File: B-36mindre4Sum.raw - Type: 2Th/Th locked - Start: 10.000 ° - End: 79.976 ° - Step: 0.100 ° - Step time: 184. s - Temp.: 25 °C (Room) - Time Started: 16 s - 2-Theta: 10.000 ° - Theta: 5.000 ° - Chi: 0 Options: 819x kAsha2 0.500 Background 38 019, 1.000 Import</small> Might contain traces of crystalline silica polymorphs (quartz) and mullite.

SEM/light microscope:



Particle size distribution:



2.3.7 Chemical composition: X-Ray Fluorescence (XRF), Inductively coupled plasma spectrometry (ICP)
Particle shape: light microscopy, Scanning Electron Microscopy (SEM)
Phase ID: X-Ray Diffraction (XRD)
Particle size distribution: laser diffraction, fractionated wet sieving