

SASFORREACH Consortium

Information Letter 2

Synthetic Amorphous Calcium Silicate (CS)

Substance Identification & Sameness

Dear SIEF member

In this letter the Consortium would like to inform you in detail about the Substance Identification & Sameness for

Synthetic Amorphous Calcium Silicate (CS), EC no. 215-710-8, CAS no. 1344-95-2

Substance Name:

- **Silicic acid, calcium salt**

Synthetic Amorphous Calcium Silicate (CS), EC no. 215-710-8, CAS no. 1344-95-2 is a **UVCB substance**,

For this registration, the definition of Synthetic amorphous Calcium Silicate (CS) covers only products from precipitation processes, i.e. precipitation of an alkaline water glass solution with a Calcium Salt and the hydrothermal treatment of synthetic amorphous silica with calcium hydroxide yielding a completely amorphous product.

No other type of Calcium Silicate manufactured by different processes is supported by the Joint Submission of the SASFORREACH Consortium.

Concentration range: $\geq 96 - \leq 99.9$ % (w/w)

Table 1: Minor constituents

Impurities	Typical concentration	Remarks
sodium chloride (NaCl)	$\geq 0 - \leq 3\%$ (w/w)	EC no. 231-598-3
sodium sulfate (Na ₂ SO ₄)	$\geq 0 - \leq 2\%$ (w/w)	EC no. 231-820-9
aluminium oxide (Al ₂ O ₃)	$\geq 0 - \leq 1.5\%$ (w/w)	EC no. 215-691-6
diiron trioxide (Fe ₂ O ₃)	$\geq 0 - \leq 800$ ppm (w/w)	EC no. 215-168-2

SASFORREACH Consortium Member Companies

Albemarle Europe, Merck Performance Materials SAS, BASF SE, Cabot Corp., Evonik Resource Efficiency GmbH, Grace GmbH & Co. KG, Industrias Químicas del Ebro S.A. (IQE), PPG Industries Chemicals, PQ Corporation, Solvay S.A., Clariant Produkte (Deutschland) GmbH, Wacker Chemie AG, Zeochem AG

Synthetic Amorphous Calcium Silicate is registered as a set of similar nanoforms with the following name:

"Set of similar nanoforms of Silicic acid, calcium salt [CAS-No. 1344-95-2]; amorphous, spheroidal (boundary composition)"

Characterisation of nanoforms in boundary composition:

Shape: spheroidal, spherical

Constituent particle size distribution and range

D10: Range of typical value: $\geq 1 - \leq 40$ nm

D50: Range of typical value: $\geq 7 - \leq 100$ nm

D90: Range of typical value: $\geq 15 - \leq 140$ nm

Fraction of constituent particles in the size range 1-100 nm (%): $\geq 65 - \leq 100$ %

Crystallinity: amorphous

Specific surface area: $\geq 10 - \leq 400$ m²/g

Surface functionalisation / treatment: no

Identification:

Silicic acid, calcium salt (CS) is predominantly characterised through the following methods of identification in IUCLID:

- Amorphous structure: X-ray diffraction (XRD)
X-ray diffraction diagrams of CS using CuK α radiation with $\lambda = 0.1542$ nm, show only a broad halo, revealing an X-ray amorphous structure. The detection limit for crystallinity by X-ray is in the order of 0.3% by weight (ECETOC 2006).
- Infrared spectroscopy (IR)
- nuclear magnetic resonance spectroscopy (NMR)

With kind regards

SASFORREACH Consortium representing Synthetic Amorphous Calcium Silicate (CS),

Patrick Wellmann

knoell Germany GmbH, Leverkusen, Germany

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