



## Bonite (Al<sub>12</sub>CaO<sub>19</sub>) identified uses

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### Uses by workers in industrial settings

<b>EU: REACH</b>	
<b>IU number</b>	1
<b>Identified use name</b>	Manufacturing of refractory products
<b>Process category</b>	PROC 3: Use in closed batch process (synthesis or formulation)  PROC 5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)  PROC 14: Production of preparations or articles by tableting, compression, extrusion, pelletisation
<b>Environmental release category</b>	ERC 3: Formulation in materials  ERC 5: Industrial use resulting in inclusion into or onto a matrix
<b>Substance supplied to that use in form of</b>	In a mixture
<b>Market sector by type of chemical product</b>	PC 2: Adsorbents  PC 0: Other: A05000, I15000, I15100, I15200, I15300, K35000, K35100, K35120, K35900, R30200, S35000, S35100
<b>Sector of end use</b>	SU 8: Manufacture of bulk, large scale chemicals (including petroleum products)  SU 13: Manufacture of other non-metallic mineral products, e.g. plasters, cement  SU 14: Manufacture of basic metals, including alloys
<b>Subsequent service life relevant for that use?</b>	yes
<b>Article category related to subsequent service life</b>	AC 0: Other: 3815, 3816, 6902, 6903, 6909, 680422, 68042212, 68042230, 6912, 6902, 6903, 6906., 6909. 8546, 854620
<b>Exposure scenario reference in the CSR</b>	no exposure scenario required, the substance is not classified as dangerous according to Directive 67/548/EEC and has no PBT/vPvB properties.

## **Bonite (Al<sub>12</sub>CaO<sub>19</sub>) identified uses**

### **Most common technical functions of the substance**

<b>Technical function of substance (what it does)</b>	other: refractory raw material
<b>Remarks</b>	Bonite is a synthetic dense refractory aggregate based on the mineralogical phase calcium hexaluminate, CA <sub>6</sub> . It is prereacted by high temperature sintering and thus shows no volume increase due to the formation of new phases during heat-up. Calcium hexaluminate is described in the literature as a refractory material that exhibits:• very high refractoriness (onset of melting 1830 °C)• low solubility in iron containing slag• high stability in reducing atmospheres, e.g. CO• high chemical resistance in alkaline environment• low wettability by molten metals and slag (ferrous and non-ferrous)• thermal expansion coefficient similar to corundumBonite combines the above described characteristics of CA <sub>6</sub> , resulting in advantages e.g. in the aluminium industry (low wettability by molten aluminium), the cement industry (high chemical resistance in alkaline environment), the steel industry (high refractoriness and low solubility in iron containing slag) and in the petrochemical industry (stability in reducing atmospheres).

### **Significant routes of exposure**

<b>Human exposure</b>
By inhalation
<b>Environmental exposure</b>
Solid waste; Air; Water
<b>Pattern of exposure</b>
Occasional