



Name: Bonite ($Al_{12}CaO_{19}$) identified uses

Legal entity owner: Almatris GmbH/ Frankfurt / Germany, Almatris BV

Bonite Uses

Manufacture, use and exposure

Use and exposure information

Formulation or re-packing

Formulation

Use number

2

Use name

Manufacture of Al₁₂O₁₉Ca-containing catalyst and catalyst precursors

Contributing activity / technique for the environment**Name of activity / technique**

Manufacture of Al₁₂O₁₉Ca-containing catalyst and catalyst precursors

Environmental release category (ERC)

ERC3: Formulation into solid matrix

Contributing activity / technique for workers**Name of activity / technique**

Manufacture of Al₁₂O₁₉Ca-containing catalyst and catalyst precursors

Process category (PROC)

PROC 1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

PROC 2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

PROC 3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment conditions

PROC 4: Chemical production where opportunity for exposure arises

PROC 8a: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

PROC 8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities

PROC 9: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

PROC 14: Tableting, compression, extrusion, pelletisation, granulation

Product category formulated

PC 0: Other: Al₁₂O₁₉Ca-containing catalyst

Technical function of the substance during formulation

processing aid

Substance supplied to that use in form of

as such

Total EU tonnage for this use

false

Limited number of sites for this use

true

Details on limited number of sites

1-10

Related assessment

use assessed in an own CSR

Uses at industrial sites**Use number**

3

Use name

Use at industrial site [Manufacture of Al₂O₃/Ca-containing refractory products]

Use as on-site isolated intermediate registered according to REACH Article 17(3)

false

Any precursor use(s)

false

Contributing activity / technique for the environment**Name of activity / technique**

Use at industrial site [Manufacture of Al₂O₃/Ca-containing refractory products]

Environmental release category (ERC)

ERC5: Use at industrial site leading to inclusion into/onto article

Contributing activity / technique for workers**Name of activity / technique**

Use at industrial site [Manufacture of Al₂O₃/Ca-containing refractory products]

Process category (PROC)

PROC 3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment conditions

PROC 5: Mixing or blending in batch processes

PROC 14: Tableting, compression, extrusion, pelletisation, granulation

Product category used

PC 0: Other: refractory material

Sector of end use

SU 13: Manufacture of other non-metallic mineral products, e.g. plasters, cement

SU 14: Manufacture of basic metals, including alloys

Technical function of the substance during use

other: refractory material

Substance supplied to that use in form of

as such

in a mixture

Subsequent service life relevant for this use

yes

Total EU tonnage for this use

false

Limited number of sites for this use

true

Details on limited number of sites

1-10

Related assessment

use assessed in an own CSR

Remarks:

Bonite is a synthetic dense refractory aggregate based on the mineralogical phase calcium hexaluminate, CA6. 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 corundum

Bonite combines the above described characteristics of CA6, 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).

Uses at industrial sites

Use number

4

Use name

Use of Al₂O₃/Ca-containing refractory products

Use as on-site isolated intermediate registered according to REACH Article 17(3)

false

Any precursor use(s)

false

Contributing activity / technique for the environment**Name of activity / technique**

Use of Al₂O₃/Ca-containing refractory products

Environmental release category (ERC)

ERC5: Use at industrial site leading to inclusion into/onto article

Contributing activity / technique for workers**Name of activity / technique**

Use of Al₂O₃/Ca-containing refractory products

Process category (PROC)

PROC 3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment conditions

PROC 5: Mixing or blending in batch processes

PROC 14: Tableting, compression, extrusion, pelletisation, granulation

Product category used

PC 2: Adsorbents

PC 0: Other: refractory material

Sector of end use

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

Technical function of the substance during use

other: refractory material

Substance supplied to that use in form of

as such

in a mixture

Subsequent service life relevant for this use

no

Total EU tonnage for this use

false

Limited number of sites for this use

false

Related assessment

use assessed in an own CSR

Remarks:

Bonite is a synthetic dense refractory aggregate based on the mineralogical phase calcium hexaluminate, CA6. 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:

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Bonite combines the above described characteristics of CA6, 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).

Service life**Service life number**

5

Service life name

Service life (worker at industrial site) [Manufacture of Al₁₂O₁₉Ca-containing refractory products]

Any precursor use(s)

false

Article used by

workers

Article category (AC)

AC 4: Stone, plaster, cement, glass and ceramic articles

Substance intended to be released from article

no

Contributing activity / technique for the environment**Name of activity / technique**

Manufacture of Al₁₂O₁₉Ca-containing refractory products

Environmental release category (ERC)

ERC12a: Processing of articles at industrial sites with low release

ERC12b: Processing of articles at industrial sites with high release

Contributing activity / technique for workers**Name of activity / technique**

Manufacture of Al₂O₃-containing refractory products

Process category (PROC)

PROC 3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment conditions

PROC 5: Mixing or blending in batch processes

PROC 14: Tableting, compression, extrusion, pelletisation, granulation

Percentage (w/w) of substance in mixture /article (%)

70

Technical function of the substance during use

other: used as a refractory material

Tonnage of substance for this use (tonnes/year)

1200

Total EU tonnage for this use

false

Related assessment

use assessed in an own CSR

LEGAL_ENTITY: Almatis GmbH, Almatis BV

General information

Legal entity name

Almatis GmbH

Legal entity type

company

Contact information

Contact persons

Person

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