

**1 – IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**
*Product identifier*

**Commercial Product Name** **VALORZAC® CRB / E / ER / F / N / P / PR / T**  
**Name** Secondary Raw Material

*Relevant identified uses of the substance or mixture and uses advised against*

**Use of the Mixture** Manufacturing of concrete and formed refractories

*Details of the supplier of the safety data sheet*

**Supplier** **VALOREF S.A.**  
 ZI La Croisière  
 F – 84 500 BOLLENE

**Telephone** + 33 (0) 4 90 40 50 00  
**Email** contact.valoref@saint-gobain.com  
**Website** www.valoref.com

*Emergency telephone number* + 33 (0) 4 90 40 50 00

**2 – HAZARDS IDENTIFICATION**
*Classification of the substance or mixture*
**Classification according to regulation CLP (EC) 1272/2008**

None of the components are classified as hazardous

*Label elements*

No label elements according to regulation 1272/2008/EC

*Other hazards*

**Human** Product with a low rate of fines: risks of emission of dust while handling  
 Possible irritation by abrasive action  
 Product with trace of natural radioactive elements (U+Th<0.05%)  
**Environment** No particular risks to the environment

**3 – COMPOSITION/INFORMATION ON INGREDIENTS**
*Substances*

Not applicable

*Mixtures*

**Nature** Electrofused refractory grain : aluminium oxide, zirconium dioxide, silicon dioxide  
**Origin** Secondary raw material from the treatment of used refractory

**Chemicals characteristics** **VALORZAC® CRB / E / ER / F / N / P / PR / T**

ELEMENTS	%	EINECS	CAS	REACH Registration Number
ALUMINIUM OXIDE	42 - 53 %	215-691-6	1344-28-1	01-2119529248-35
ZIRCONIUM DIOXYDE	25 - 43 %	215-227-2	1314-23-4	01-2119486976-14
SILICON DIOXYDE	12 - 20 %	231-545-4	7631-86-9	Exempted

#### 4 – FIRST AID MEASURES

*Description of first aid measures*

<b>Skin contact</b>	Wash with water and soap
<b>Eyes contact</b>	Immediately wash with water for 15 minutes and treat as well a particle
<b>Ingestion</b>	Seek medical advice immediately
<b>Inhalation</b>	Dust : go to dust free environment

*Most important symptoms and effects, both acute and delayed*

Not applicable

*Indication of any immediate medical attention and special treatment needed*

Not applicable

#### 5 – FIREFIGHTING MEASURES

*Extinguishing media*

The product is non – flammable and is compatible with all firefighting measures

*Special hazards arising from the substance or mixture*

Not applicable

*Advice for firefighters*

Not applicable

#### 6 – ACCIDENTAL RELEASE MEASURES

*Personal precautions, protective equipment and emergency procedures*

Wear gloves, an anti-dust mask, type FFP3, and security glasses. Clean by aspiration

*Environmental precautions*

Clean by aspiration to prevent dust production

*Methods and materials for containment and cleaning up*

**Cleaning methods** Pick up mechanically and clean by aspiration

*Reference to other sections*

Not applicable

#### 7 – HANDLING AND STORAGE

*Precautions for safe handling*

<b>Deconditioning</b>	Use an anti-dust mask, type FFP3, according to NF EN 149
<b>Product handling</b>	Use the Individual Protection Equipments (Security glasses, anti-dust mask type FFP3 according to NF EN 149, security shoes) Handle in ventilated areas

*Conditions for safe storage, including any incompatibilities*

<b>Storage</b>	Dry storage needed
<b>Special care of</b>	Dense Product, control of right capacity of silos and all containers

*Specific end use(s)*

Not applicable

#### 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

In normal conditions of use, the product doesn't yield exposure above >1 mSv/y (1600 h/y) – public limits in accordance with Euratom 96/29 directive

### Limits of inhalation :

- **Compounds of aluminum oxide :** 5 mg/m<sup>3</sup> - OSHA / 10 mg/m<sup>3</sup> ACGIH per 8 hours (TWA)  
6 mg/m<sup>3</sup> cellular, MAK per 8 hours  
10 mg/m<sup>3</sup> France per 8 hours (VME)
- **Amorphous silicon dioxide :** 4 mg/m<sup>3</sup>, MAK – 6 mg/m<sup>3</sup>, OSHA per 8 hours (TWA)  
10 mg/m<sup>3</sup> ACGIH per 8 hours (TWA)
- **Compounds of zirconium dioxide :** 0.5 mg/m<sup>3</sup> per 8 hours ACGIH, MAK et OSHA (TWA)  
10 mg/m<sup>3</sup> per 15 min ACGIH et OSHA (STEL)

### Exposure controls

- Individual protection measures in normal use** Use the Individual Protection Equipments (Security glasses, anti-dust mask type FFP3 according to NF EN 149, security shoes)
- Special protection measures** Handle in ventilated areas

## 9 – PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Appearance</b>	Granule – fines (>60µm)	<b>Odour</b>	Nil
<b>Bulk density</b>	3.1 / 4 t/m <sup>3</sup>	<b>Solubility in water</b>	Product non soluble
<b>Colour</b>	Grey to beige	<b>Humidity</b>	<1 %

### Other information

Not applicable

## 10 – STABILITY AND REACTIVITY

Not applicable

## 11 – TOXICOLOGICAL INFORMATION

### Information on toxicological effects

#### Acute toxicity

##### - orally

ZrO<sub>2</sub> DL50 > 5000 mg/kg (rat). *OECD 401*  
Al<sub>2</sub>O<sub>3</sub> LD50 > 2000 mg/kg bw (rat). *OECD 420*

##### - by inhalation

Average maximum concentration applicable :  
ZrO<sub>2</sub> CL50 > 4.3 mg/l. *OECD 436*  
Al<sub>2</sub>O<sub>3</sub> LC50 > 2.3 mg/l. *OECD 403*  
ZrO<sub>2</sub> DL50 > 5000 mg/kg (rat). *OECD 401*

#### Skin irritation

ZrO<sub>2</sub> Not irritating to the skin of rabbits *OECD 404*  
Al<sub>2</sub>O<sub>3</sub> Not irritating to the skin of rabbits *OECD 404*

#### Eye Irritation

ZrO<sub>2</sub> Slightly irritating based on the AFNOR criteria. It does however not need to be classified for eye irritation according to the rules in DSD and CLP *OECD 405*  
Al<sub>2</sub>O<sub>3</sub> The substance was determined to not be eye irritant *OECD 405*

#### Skin sensitisation

ZrO<sub>2</sub> Non-sensitizing substance *OECD 406*  
Al<sub>2</sub>O<sub>3</sub> Non-sensitizing substance *Landsteiner / Draize method*

**Chronic toxicity**
**- orally**

 ZrO<sub>2</sub> Absence of cumulative toxic effects *OECD 401*
**- by inhalation**

 Inhalation of 100.8 mg/m<sup>3</sup> zirconium dioxide for 30 days produced no significant changes in animals in mortality rate, growth, hematologic values or histopathology. The NOAEC was deemed to be greater than 100.8 mg/m<sup>3</sup> *OECD 412*

 Inhalation of 15.4 mg/m<sup>3</sup> zirconium dioxide for 60 days produced no significant changes in animals in mortality rate, growth, biochemistry, hematologic values or histopathology. The NOAEC was deemed to be greater than 15.4 mg/m<sup>3</sup> *OECD 413*

 Al<sub>2</sub>O<sub>3</sub> NOAEC = 70 mg/m<sup>3</sup> *OECD 413*
**Epidémiological data**

 ZrO<sub>2</sub> No excess of respiratory symptoms and no radiologic evidence of pneumoconiosis occurred among the exposed men

**Exposure related observations in humans**

 ZrO<sub>2</sub> No evidence was found of pulmonary granulomas or of correlation between cumulative exposure to dust and ILO classification of radiographs

**Genetic toxicity in vitro**

 Zirconium dioxide is considered as « not mutagenic under the conditions of the test » *OECD 471*

 Zirconium dioxide is not clastogenic in human lymphocytes under the experimental conditions of this test *OECD 473*

 Zirconium dioxide is not mutagenic in the TK mutation test system under the specified experimental conditions *OECD 476*

 Aluminium oxide No effects (The authors briefly mention that no mortality nor toxic symptoms were observed at any dose level in the range-finding study nor in the 5 rats at the highest dose level in the main study that was reported in the article) *OECD TG 420*
**Local effects**

The dust can cause mechanical irritation of the eyes and the respiratory tract

## 12 – ECOLOGICAL INFORMATION

*Toxicity*
**Short-term toxicity**
**- to fish**

 ZrO<sub>2</sub> Using a limit test at 100 mg/L : no acute toxic effect on the fish *Danio Rerio*  
 Al<sub>2</sub>O<sub>3</sub> NOEC (96h) > 0.071 mg/L *OECD 203 (Salmo trutta)*  
 LC50 (96h) > 218.64 mg/L total Al, no filtered *Pimephales promelas*
**- to aquatic invertebrates**

 ZrO<sub>2</sub> No acute effect on *Daphnia Magna* at an initial loading rate of 100 mg/L  
 Al<sub>2</sub>O<sub>3</sub> NOEC (48h) > 0.071 mg/L dissolved. (*Daphnia Magna*) *OECD 202*
**Toxicity to aquatic algae and cyanobacteria**

 ZrO<sub>2</sub> The test item had a statistically significant inhibitory effect on the growth of *Scenedesmus Subspicatus* (Test period of 72 hours at the highest loading rate of 100 mg/L)

**Toxicity to terrestrial plants**

 ZrO<sub>2</sub> Not any adverse effects were observed (study realized with tomato and pea seedlings, exposed for 7 days to two different soils contaminated with either a soluble Zirconium compound (ZrOCl<sub>2</sub> or Zr acetate) or an insoluble Zirconium compound (Zr(OH)<sub>4</sub>) )

*Persistence and degradability*

No data available

*Bioaccumulative potential*
**Bioaccumulation**

 ZrO<sub>2</sub> Not applicable, the substance is not classified

Al<sub>2</sub>O<sub>3</sub> Not applicable, the substance is not classified

*Mobility in soil*

ZrO<sub>2</sub> Not applicable, the substance is not classified  
 Al<sub>2</sub>O<sub>3</sub> Not applicable, the substance is not classified

*Results of PBT and vPvB assessment*

ZrO<sub>2</sub> Not applicable, the substance is not classified  
 Al<sub>2</sub>O<sub>3</sub> Not applicable, the substance is not classified

*Other adverse effects*

**Other information** Avert the reject in the environment

### 13 – DISPOSAL CONSIDERATIONS

*Waste treatment methods*

**Elimination** Non dangerous material which can be eliminated as same, but which may contain some lixiviable pollutant agent. Control of pollutant potential before elimination.

### 14 – TRANSPORT INFORMATION

*UN number*

Not applicable

*Proper shipping name*

Not applicable

*Transport hazard clas(ses)*

Not applicable

*Packing group*

Not applicable

*Environmental hazards*

Not applicable

*Special precautions for user*

**Unloading care** Bulk transportation :  
 Move away the personnel of the zone of unloading  
 Open the doors with a mechanical or hydraulic system

### 15 – INFORMATIONS REGLEMENTAIRES

*Safety, health and environmental regulations/legislation specific for the substance or mixture*

**CLP regulation EC 1272/2008**

Symbols and indications of danger	No symbol
H phrases	No H phrase
P phrases	No P phrase

*Chemical Safety Assessment*

ZrO<sub>2</sub> Not applicable, the substance is not classified  
 Al<sub>2</sub>O<sub>3</sub> Not applicable, the substance is not classified

**16 – OTHER INFORMATION**

*The information hereby contained is elements aware by VALOREF fat the time of the product's delivery. They couldn't substitute any safety and care instructions specified by the company while processing.*

*Responsibility of VALOREF couldn't be engaged in case of injuries or accident because of wrong non utilization of this information.*