

1 – IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

Commercial Product Name VALORZAC® PR / N / T / CRB / ER
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
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Website www.valoref.eu

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 + 33 (0) 4 90 40 50 00

2 – HAZARDS IDENTIFICATION

Classification of the substance or mixture

Classification according to Directive 67/548/EEC, 1999/45/EC and 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® PR / N / T / CRB / ER

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

Skin contact	Wash with water and soap
Eyes contact	Immediately wash with water for 15 minutes and treat as well a particle
Ingestion	Seek medical advice immediately
Inhalation	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

Deconditioning	Use an anti-dust mask, type FFP3, according to NF EN 149
Product handling	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

Storage	Dry storage needed
Special care of	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/m³ - OSHA / 10 mg/m³ ACGIH per 8 hours (TWA)
6 mg/m³ cellular, MAK per 8 hours
10 mg/m³ France per 8 hours (VME)
- **Amorphous silicon dioxide :** 4 mg/m³, MAK – 6 mg/m³, OSHA per 8 hours (TWA)
10 mg/m³ ACGIH per 8 hours (TWA)
- **Compounds of zirconium dioxide :** 0.5 mg/m³ per 8 hours ACGIH, MAK et OSHA (TWA)
10 mg/m³ 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

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

Other information

Not applicable

10 – STABILITY AND REACTIVITY

Not applicable

11 – TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity

- orally

ZrO₂ DL50 > 5000 mg/kg (rat). *OECD 401*
Al₂O₃ LD50 > 2000 mg/kg bw (rat). *OECD 420*

- by inhalation

Average maximum concentration applicable :
ZrO₂ CL50 > 4.3 mg/l. *OECD 436*
Al₂O₃ LC50 > 2.3 mg/l. *OECD 403*
ZrO₂ DL50 > 5000 mg/kg (rat). *OECD 401*

Skin irritation

ZrO₂ Not irritating to the skin of rabbits *OECD 404*
Al₂O₃ Not irritating to the skin of rabbits *OECD 404*

Eye Irritation

ZrO₂ 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*
Al₂O₃ The substance was determined to not be eye irritant *OECD 405*

Skin sensibilisation	ZrO ₂ Non-sensitizing substance <i>OECD 406</i> Al ₂ O ₃ Non-sensitizing substance <i>Landsteiner / Draize method</i>
Chronic toxicity	
- orally	ZrO ₂ Absence of cumulative toxic effects <i>OECD 401</i>
- by inhalation	Inhalation of 100.8 mg/m ³ 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 ³ <i>OECD 412</i> Inhalation of 15.4 mg/m ³ 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 ³ <i>OECD 413</i> Al ₂ O ₃ NOAEC = 70 mg/m ³ <i>OECD 413</i>
Epidémiological data	ZrO ₂ No excess of respiratory symptoms and no radiologic evidence of pneumoconiosis occurred among the exposed men
Exposure related observations in humans	ZrO ₂ 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 » <i>OECD 471</i> Zirconium dioxide is not clastogenic in human lymphocytes under the experimental conditions of this test <i>OECD 473</i> Zirconium dioxide is not mutagenic in the TK mutation test system under the specified experimental conditions <i>OECD 476</i> 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) <i>OECD TG 420</i>
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 ₂ Using a limit test at 100 mg/L : no acute toxic effect on the fish <i>Danio Rerio</i> Al ₂ O ₃ NOEC (96h) > 0.071 mg/L <i>OECD 203 (Salmo trutta)</i> LC50 (96h) > 218.64 mg/L total Al, no filtered <i>Pimephales promelas</i>
- to aquatic invertebrates	ZrO ₂ No acute effect on <i>Daphnia Magna</i> at an initial loading rate of 100 mg/L Al ₂ O ₃ NOEC (48h) > 0.071 mg/L dissolved. (<i>Daphnia Magna</i>) <i>OECD 202</i>
Toxicity to aquatic algae and cyanobacteria	ZrO ₂ The test item had a statistically significant inhibitory effect on the growth of <i>Scenedesmus Subspicatus</i> (Test period of 72 hours at the highest loading rate of 100 mg/L)
Toxicity to terrestrial plants	ZrO ₂ 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 ₂ or Zr acetate) or an insoluble Zirconium compound (Zr(OH) ₄)

Persistence and degradability

No data available

Bioaccumulative potential

Bioaccumulation	ZrO ₂	Not applicable, the substance is not classified
	Al ₂ O ₃	Not applicable, the substance is not classified

Mobility in soil

ZrO ₂	Not applicable, the substance is not classified
Al ₂ O ₃	Not applicable, the substance is not classified

Results of PBT and vPvB assessment

ZrO ₂	Not applicable, the substance is not classified
Al ₂ O ₃	Not applicable, the substance is not classified

Other adverse effects

Other information	Avert the reject in the environment
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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.
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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
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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

ZrO₂ Not applicable, the substance is not classified
Al₂O₃ 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.
