

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

**Commercial Product Name** **VAL<sup>®</sup> ZM 10R et 20R**  
**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.eu

*Emergency telephone number*  
 + 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** Refractory grain of sintered AZS  
**Origin** Secondary raw material from the treatment of used refractory

**Chemicals characteristics** **VAL<sup>®</sup> ZM 10R et 20R**

ELEMENTS	%	EINECS	CAS	REACH Registration Number
MULLITE	78 - 91 %	215-113-2	1302-93-8	Exempted
ZIRCONIUM DIOXYDE	9 - 22 %	215-227-2	1314-23-4	01-2119486976-14

#### 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

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

## 9 – PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Appearance</b>	Granule – fines	<b>Odour</b>	Nil
<b>Bulk density</b>	2.8 t/m <sup>3</sup>	<b>Solubility in water</b>	Product non soluble
<b>Colour</b>	Beige to grey	<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*

- by inhalation                                      Average maximum concentration applicable :  
ZrO<sub>2</sub>    CL50 > 4.3 mg/l. *OECD 436*

**Skin irritation**                                      ZrO<sub>2</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*

**Skin sensitisation**                                ZrO<sub>2</sub>    Non-sensitizing substance *OECD 406*

#### Chronic toxicity

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

<b>- by inhalation</b>	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> <i>OECD 412</i> 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> <i>OECD 413</i>
<b>Epidémiological data</b>	ZrO <sub>2</sub> No excess of respiratory symptoms and no radiologic evidence of pneumoconiosis occurred among the exposed men
<b>Exposure related observations in humans</b>	ZrO <sub>2</sub> No evidence was found of pulmonary granulomas or of correlation between cumulative exposure to dust and ILO classification of radiographs
<b>Genetic toxicity in vitro</b>	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>
<b>Local effects</b>	The dust can cause mechanical irritation of the eyes and the respiratory tract

## 12 – ECOLOGICAL INFORMATION

### *Toxicity*

#### **Short-term toxicity**

<b>- to fish</b>	ZrO <sub>2</sub> Using a limit test at 100 mg/L : no acute toxic effect on the fish <i>Danio Rerio</i>
<b>- to aquatic invertebrates</b>	ZrO <sub>2</sub> No acute effect on <i>Daphnia Magna</i> at an initial loading rate of 100 mg/L
<b>Toxicity to aquatic algae and cyanobacteria</b>	ZrO <sub>2</sub> 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)
<b>Toxicity to terrestrial plants</b>	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*

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

### *Mobility in soil*

ZrO<sub>2</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

### *Other adverse effects*

<b>Other information</b>	Avert the reject in the environment
--------------------------	-------------------------------------

### 13 – DISPOSAL CONSIDERATIONS

#### Waste treatment methods

**Elimination** Inert 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

### 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.