

**Section 1: Identification****1.1 Product identifier**Product Name: **Alumina Zirconia****1.2 Recommended use and Restriction on use****Recommended use:** Abrasives material used in surface preparation and the manufacturing of bonded abrasive products.**Restrictions of use:** Other than identified uses indicated above.**1.3 Details of the supplier of the product information**Supplier: Guyson Corporation of U.S.A.  
13 Grande Blvd.  
Saratoga Springs, NY 12866  
[www.guyson.com](http://www.guyson.com)  
[info@guyson.com](mailto:info@guyson.com)**1.4 Telephone number: 518-587-7894****Section 2: Hazard Identification****2.1 Classification of the substance or mixture**

Directives 67/548/EEC and 1999/45/EC

Not classified

CLP regulations EC 1272/2008:

Not classified

OSHA GHS (US):

Not classified

**2.2 Label elements:**Not required under Directives 67/548/EE,  
Regulation EC 1272/2008 and OSHA GHS (US)**GHS Label elements:****Hazard pictograms:****Signal word:****Hazard-determining components of labeling:****Hazard statements:**

Not Regulated

**Precautionary Statements:**

Not Regulated

**Hazard Description:****WHMIS-symbols:**

Not hazardous under WHMIS

**Classification system:****NFPA ratings (scale 0-4)**

Health= 0

Fire= 0

Reactivity= 0

**HMIS-ratings (scale 0-4)****2.3 Other hazards:**

Adverse effects on health:

Possible irritation through abrasive friction.

Environmental; effects:

Does not present any particular risk for the environment.

Physical and chemical hazards:

Fire or explosion: Does not present any particular hazard

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Results of PBT and vPvB assessment:

PBT:

vPvB:

### **Section 3: Composition / Information on Ingredients**

#### **3.1 Chemicals characterization: Substances**

##### **CAS No. Description**

1344-28-1 Aluminum Oxide (Al<sub>2</sub>O<sub>3</sub>)

1314-23-4 Zirconium Dioxide (ZrO<sub>2</sub>)

12005-23-1 Hafnium Oxide

### **Section 4: First-Aid Measures**

#### **4.1 Description of first aid measures**

**General Information:** No special measures required.

**After inhalation:** Respiration of particles is unlikely during normal usage. Supply fresh air.  
Consult doctor in case of complaints.

**After skin contact:** Brush off loose particles from skin.  
Wash with soap and water.  
If skin irritation is experienced consult a doctor.

**After eye contact:** Rinse eyes with water for several minutes.  
Remove contact lenses (if present) and continue rinsing  
If symptoms persist, consult a doctor.

**After swallowing:** Consult a doctor in the event of symptoms following massive accidental ingestion.

##### **Information for Doctor:**

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

No further relevant information available.

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

Treat symptomatically.

### **Section 5: Fire-Fighting Measures**

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### **5.1 Extinguishing media**

**Suitable extinguishing media agents:**

Use firefighting measures that suit the environment.

**For safety reasons unsuitable extinguishing agents:**

None

### **5.2 Special hazards arising from the substance or mixture**

This product is not combustible or explosive.

Does not present any particular risk in the event of a fire.

### **5.3 Advice for fire-fighters**

**Protective equipment:**

Use appropriate protective equipment.

**Additional Information:**

No further relevant information available.

## **Section 6: Accidental Release Measures**

### **6.1 Personal precautions, protective equipment and emergency procedures**

Avoid contact with eyes.

### **6.2 Environmental precautions**

Do not discharge into drains and rivers.

### **6.3 Methods and materials for containment and cleaning up**

Pick up mechanically. Wear eye protectors and a dust mask.

### **6.4 Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

## **Section 7: Handling and Storage**

### **7.1 Precautions for safe handling**

Technical measures: Ensure areas are well ventilated.

Precautions to be taken: For operations generating dust: Wear N95, FFP2 or FFP3 dust mask.

**Information about fire- and explosion protection**

No special measures required.

### **7.2 Conditions for safe storage, including any incompatibilities**

**Storage:**

Store in closed container in covered area:

**Requirements to be met by storerooms and receptacles:**

No special requirements.

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### **Information about storage in one common storage facility:**

Dense material: Observe safety rules when stacking.

### **Further information about storage conditions:**

### **7.3 Specific end use(s)**

See section 1.1

## **Section 8: Exposure Controls / Personal Protection**

### **8.1 Additional information about design of technical systems**

**Control parameters:** Ensure good ventilation of the work station.

### **Components with limit values that require monitoring at the workplace.**

#### **1314-23-4 Zirconium Dioxide**

TLV (USA)	Short-term value, ACGIH:	10 mg/m <sup>3</sup> as Zr
	Long-term value, ACGIH:	5 mg/m <sup>3</sup> as Zr

#### **1344-28-1 Aluminum Oxide**

TLV (USA)	Long-term value, ACGIH:	1 mg/m <sup>3</sup> as Al
	For respirable fraction	

### **Additional Information:**

### **8.2 Exposure Controls**

- **Personal protective equipment:**

- **General protective and hygienic measures:**

Provide adequate ventilation. The usual precautionary measures for handling chemicals should be followed. Keep away from food, beverages and feed. Wash hands before breaks and at the end of work. Avoid contact with eyes. Avoid close or long term contact with skin. Do not inhale dust/ smoke/ mist.

#### **Engineering controls:**

#### **Breathing equipment:**

Use suitable respiratory protective device in case of insufficient ventilation. For spills, respiratory protection may be advisable.

#### **Protection of hands:**

Wear gloves for the protection against mechanical hazards according to OSHA and NIOSH rules. Gloves are advised for repeated or prolonged contact. The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

#### **Material of gloves:**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

#### **Eye Protection:** Safety glasses

**Body Protection:** Wear safety shoes. Protection may be required for spills

**Limitation and supervision of exposure into the environment:** No special requirements.

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Risk management measures: No special requirements

Pictograms:

**Section 9: Physical and Chemical Properties****9.1 Information on basic physical and chemical properties**

Form:	Grains
Color:	Steel gray/ Blue gray
Odor:	Odorless
Melting point:	1900 °C
Flash point:	Not applicable
Specific gravity:	4.2 - 4.3
Solubility:	Insoluble

**Other Information:**

No further relevant information

**Section 10: Stability and Reactivity****10.1 Reactivity**

No reactivity under normal conditions of use.

**10.2 Chemical stability**

Stable under normal conditions of use and below 1300 °C

**Thermal decompositions/ conditions to be avoided:**

**10.3 Possibility of hazardous reactions**

No data available.

**10.4 Conditions to avoid**

No dangerous reactions known under normal conditions of use.

**10.5 Incompatible materials**

Reacts with strong acids and bases.

**10.6 Hazardous decomposition products**

No data available.

**Section 11: Toxicological Information****11.1 Information on toxicological effects**

<b>Acute oral toxicity</b>	LD50 > 5000 mg/kg (rat), OECD 401. ZrO <sub>2</sub> LD50 > 2000 mg/kg bw (rat), OECD 420. Al <sub>2</sub> O <sub>3</sub>
<b>Acute inhalation toxicity</b>	LC50 > 4.3 mg/l, OECD 436. ZrO <sub>2</sub> LC50 > 2.3 mg/l, OECD 403. Al <sub>2</sub> O <sub>3</sub>
<b>Skin corrosion/irritation</b>	The test substance was determined not to be irritating to the skin of rabbits, OECD 404. ZrO <sub>2</sub> The test substance was determined not to be irritating to the skin of rabbits, OECD 404. Al <sub>2</sub> O <sub>3</sub>
<b>Eye Irritation</b>	The test agent was determined to be slight irritating bases on the AFNOR criteria. It does however not need to be classified for eye irritation according to the rules in this DSD and CLP, OECD 405. ZrO <sub>2</sub> The substance was determined to not be eye irritant, OECD 405. Al <sub>2</sub> O <sub>3</sub>
<b>Skin sensitization</b>	The substance does not have skin sensitizing potential under conditions of this test, OECD 406. ZrO <sub>2</sub> . The substance does not have skin sensitizing potential under conditions of this test. Landsteiner/ Draize method. Al <sub>2</sub> O <sub>3</sub>
<b>Repeated dose oral toxicity:</b>	Absence of cumulative toxic effects, OECD 408. ZrO <sub>2</sub>
<b>Repeated dose inhalation toxicity:</b>	Inhalation of 100.8 mg/m <sup>3</sup> zirconium dioxide for 30 days produced no significant changes in the animals mortality rate, growth, hematologic values of histopathology. The NOAEC was deemed to be greater than 100.8 mg/m <sup>3</sup> , OECD 412. ZrO <sub>2</sub> Inhalation of 15.4 mg/m <sup>3</sup> zirconium dioxide for 60 days produced no significant changes in animals mortality rate, growth, or biochemistry, hematologic values or histopathology. The NOAEC was deemed to be greater than 15.4 OECD 413 ZrO <sub>2</sub> NOAEC=70 mg/m <sup>3</sup> . OECD 413. Al <sub>2</sub> O <sub>3</sub>
<b>Epidemiological data:</b>	No excess of respiratory symptoms and no radiologic evidence of pneumoconiosis occurred among the exposed men. ZrO <sub>2</sub>
<b>Exposure related observations in humans:</b>	No evidence was found of pulmonary granulomas or of correlation between cumulative exposure to dust and ILO classification of radiographs. ZrO <sub>2</sub>
<b>Genetic toxicity in vitro:</b>	Zirconium dioxide is considered as not mutagenic under the conditions of the test , OECD 471. ZrO <sub>2</sub> Zirconium dioxide is not clastogenic in human lymphocytes under the experimental conditions of this test, OECD 473. ZrO <sub>2</sub> zirconium dioxide is not mutagenic in the TK mutation test system under the specified experimental conditions, OECD 476. ZrO <sub>2</sub> No effects. The authors briefly mention that no mortality nor toxic symptoms were observed at any dose level in the range-finding study (OECD TG #420) nor in the 5 rats at the highest dose level in the main study that was reported in this article. Al <sub>2</sub> O <sub>3</sub>

## Section 12: Ecological Information

### 12.1 Toxicity

#### Short term toxicity to fish:

Using a limit test at 100 mg/l, no acute toxic effect on the fish Danio rerio. ZrO<sub>2</sub>  
NOEC (96 h): > 0.072 mg/L OECD 203 (Salmo Trutta). Al<sub>2</sub>O<sub>3</sub>  
LC50 (96 h) > 218.64 mg/L total Al, not filtered. Pimephales promelas.  
Al<sub>2</sub>O<sub>3</sub>

#### Short term toxicity to aquatic invertebrates:

No acute effect on Daphnia Magna at an initial loading rate of 100 mg/l. ZrO<sub>2</sub>  
NOEC (48 h): > 0.071 mg/L dissolved. Daphnia Magna. OECD 202. Al<sub>2</sub>O<sub>3</sub>

#### Toxicity to aquatic algae and cyanobacteria:

The test item has 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) ZrO<sub>2</sub>

#### Toxicity to terrestrial plants:

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>). ZrO<sub>2</sub>

### 12.2 Persistence and degradability

No data available

### 12.3 Bio accumulative potential

No data available

### 12.4 Mobility in soil

No data available.

### 12.5 Results of PTB and vPvB assessment

Not relevant because the substances are not classified.

### 12.6 Other adverse effects

No data available

## Section 13: Disposal Considerations

### 13.1 Waste Treatment Methods:

- **Recommendation:**  
Dispose in accordance with relevant local regulations.
- **Waste from product-deconstruction & disposal-contaminated packaging:**  
Dispose in accordance with relevant local regulations.

## Section 14: Transport Information

#### International regulations

RID/ ADR/ IMDG/ IATA: Not restricted

**Section 15: Regulatory Information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****United States (USA):****Directives 67/548/CEE and 1999/45/CE****CLP regulation EC 1272/2008**

Symbols and indications of danger	No symbol	Symbols and Indications of danger	No symbol
R phrases	No R phrases	H phrases	No H phrases
S phrases	No S phrases	P phrases	No P phrases

All ingredients are listed on TSCA (Toxic Substance Control Act).  
None of the substances are listed in proposition 65 (California).

**15.2 Chemical Safety Assessment**

A Chemical Safety Assessment has not been carried out because the substances are not hazardous.

**Section 16: Other information**

**Restrictions of use:** The product must not be used for applications other than those indicated in section 1.

**Replace sheet:** 04/26/2011

**Information concerning the modifications:**

Mention of US GHS in sections 2 and 15

This sheet completes the technical sheets but it does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the risks possibly incurred by using the product for any other purpose than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility for the user to take all precautions required in handling the product. The mandatory regulations mentioned are only intended to help the user to fulfill his obligations regarding the use of hazardous products. This listing must not be considered exhaustive. It does not exonerate the user from ensuring that other legal obligations than those mentioned to not exist, relating to the use and storage of the product for which he solely is responsible.

**Abbreviations & Acronyms**

ADR: (European Agreement concerning the International Carriage of dangerous goods by road)

IMDG: International Marine time code for dangerous goods.

DOT: US Department of Transportation

IATA: International Air Transport association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Material Identification System (USA)

WHMIS: Workplace Hazardous Material Identification System (USA)

LC50: Lethal Concentration, 50 percent

LD50 Lethal Dose, 50 percent



