

MATERIAL SAFETY DATA SHEET

Revision date 09 October 2007

1 Identification of substance

- 1.1 Product details / trade name **zerion**
- 1.2 Manufacturer / Supplier
- Name *etkon AG*
- Address *Lochhamer Schlag 6, 82166 Gräfelfing*
- Phone *089 / 30 90 75 0*
- Fax *089 / 30 90 75 599* e-mail *info@etkon.de*
- Internet *www.etkon.de*
- Area providing information *Phone or Fax*
- Emergency information *As above*
- 1.3 Emergency Information *As above*

2 Composition / Data on components

- 2.1 Application *Zirconium oxide ceramic in presintered plates*
- 2.2 Chemical characterization:

CAS No. Symbols	EEC No.	Designation of the component(s)	Part(s)	R statements
<i>1314 – 23 – 4</i>	<i>215 – 222 – 7</i>	<i>Zirconium oxide &</i>	<i>94</i>	
<i>7440 – 58 – 6</i>	<i>231 – 166 – 4</i>	<i>hafnium oxide</i>		
<i>1314 – 36 – 9</i>	<i>215 – 233 – 5</i>	<i>Yttrium oxide</i>	<i><5.5</i>	
<i>1344 - 28 - 1</i>	<i>215 – 691 - 6</i>	<i>Aluminum oxide</i>	<i><0.5</i>	

3 Hazards Identification

- 3.1 Information pertaining to particular dangers for man and environment
- Direct contact with grinding dust can cause irritation of eyes and skin.*

4 First aid measures

- 4.1 General information *Consult physician if complaints continue*
- 4.2 After inhalation *Ensure fresh air*
- 4.3 After skin contact *After skin contact with grinding dust: wash well with warm water and soap.*
- 4.4 After eye contact *Immediate washing out with clean, cooler water. Consult a doctor if the irritation continues.*

5 Fire fighting measures

Zerion is not flammable.

6 Accidental release measures

Zerion is available as a solid –unintentional release as with liquids and gases is therefore impossible.

7 Handling and storage

7.1 Information for safe handling *Zerion may be processed only by trained employees. Observe instructions for use when processing, especially:*

- *Ensure sufficient cooling*
- *Avoid dust formation and dust deposits*
- *Ventilate workplace sufficiently and use dust extraction*

7.2 Storage

No special requirements are placed on storage.

8 Exposure controls and personal protection

8.1 Components with workplace-related threshold limit values that require monitoring

CAS No.	Designation of the substance	Peak limitation - Exceeding factor	Type	Value	Unit
1314-23-4	<i>Zirconium dioxide</i>	4	TLV E	5.0	mg/m ³
12055-23-1	<i>Hafnium dioxide</i>		TLV E	0.5	mg/m ³

Additional information E = inhalable portion

8.2 Work hygiene and personal protective equipment

Breathing protection *Breathing mask*

Eye protection *Goggles*

General protective measures

Hygienic measures

9 Physical and chemical properties

9.1 Appearance

Form *Solid*

Color *white*

Odor *odorless*

9.2.1 pH value on delivery *Not applicable*

9.2.2 Condition change *Not applicable*

9.2.3 Flame point *Not applicable*

9.2.4 Ignition temperature *Not applicable*

9.2.5 Fire-promoting properties *Not applicable*

9.2.6 Risk of explosion *Not applicable*

9.2.7 Density *Not relevant*

9.2.8 Solubility (mg/l) in water *Insoluble*

10 Stability and reactivity

10.1 *Industrially produced solid for which thermal decomposition can be excluded in use as intended.*

11 Toxicological information

11.1. Additional toxicological information:

Zerion neither has cell toxic potential nor does it cause allergic sensitization. Zerion is biocompatible

11.2 Experience from practice - Observations relevant to classification

Product contact with the eyes can lead to irritation especially for grinding dust – inhaling the grinding dusts can lead to irritation of the airways.

12 Ecological information

General notes

With correct handling and use, ecological effects do not have to be feared.

13 Disposal considerations

Product recommendation

Dispose of product residues under compliance with the local and official regulations.

14 Transport regulations

14.1 Land transport (ADR/RID/GGVS/GGVE)

ADR/RID-GGVS/E

Warning sign

Comments

No special precautions or action required.

14.2 Inland water transport AND/ADNR

Comments

No special precautions or action required.

14.3 Sea transport IMDG/GGV sea

IMDG/GGV Sea class

marine pollutant

UN-No. PG

EmS-No.

MFAG no yes(p) yes(pp)

14.4 Air transport ICAO/IATA

ICAO/IATA class UN/ID-No. PG

No special precautions or action required.

15 Regulatory Information

15.1 Identification according to EU Directives

No identification in the meaning of the hazardous substance law required.

15.2 Hazard-determining components for labeling

15.2.1 R statements Text(s) *None* *R statements*

15.2.2 R statements Text(s) *None* *S statements*

15.2.3 Special identification of certain preparations *Not applicable*

15.2.4 Notes on employment restriction Accident code

15.2.5 Classification according to VbF: Technical air instructions Water hazard class
Not applicable *Not applicable* *Not applicable*

15.2.6 Other regulations, restrictions and prohibitions

Zerion does not require identification according to hazardous substance law.

16 Other information

16.1 Training information *Information on use*

16.2 Department issuing the data sheet *Research and development*

NOTES

Safety data sheet according to TRGS 220

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The information in this safety data sheet is based on the current state of our knowledge and on our experience with the product. It serves exclusively for reducing risk in handling the product and therefore describes it only with regard to safety aspects. The information is thus no assurance of properties within the meaning of our General Terms of Business. It also does not relieve the user from his duty to take care with regard to compliance with applicable laws, regulations and provisions.

We provide our safety data sheets on request free of charge on first-time purchase of the product, further copies can be requested against reimbursement of costs. When the safety data sheet is updated, we inform in agreement with the relevant regulations all those users who have received the safety data sheet from us in the course of the last 12 months before the update. This is done by sending the updated version free of charge. Owners of older safety data sheets can inquire the relevant revision status (=last changed).