

**1 Identification**

- **Product identifier**
- **Trade name:** CERABIEN ZR
- **Article number:** US824
- **Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Dental porcelain
- **Details of the supplier of the safety data sheet**
- **Manufacturer:**  
Kuraray Noritake Dental Inc.  
300 Higashiyama, Miyoshi-cho,  
Miyoshi, Aichi, 470-0293  
Japan
- **Contact information:**  
Kuraray America, Inc.  
33 Maiden Lane, 6th Floor, New York,  
NY 10038 U.S.A.  
Tel: 800-879-1676  
Fax: 888-700-5200  
Website: www.kuraraydental.com
- **Emergency telephone number:**  
For chemical emergency spill, leak, fire, exposure or accident  
Call CHEMTREC day and night  
Within USA and Canada: 1-800-424-9300 CCN706984 or  
+1 703-527-3887 (collect calls accepted)

**2 Hazard(s) identification**

- **Classification of the substance or mixture**



GHS08 Health hazard

- Muta. 2 H341 Suspected of causing genetic defects.
- Carc. 1A H350 May cause cancer.
- Repr. 2 H361 Suspected of damaging fertility or the unborn child.
- STOT RE 1 H372 Causes damage to organs through prolonged or repeated exposure.



GHS07

- Acute Tox. 4 H302 Harmful if swallowed.
- Skin Sens. 1 H317 May cause an allergic skin reaction.

- **Label elements**

- **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms** GHS07, GHS08

- **Signal word** Danger

- **Hazard-determining components of labeling:**

vanadium pentoxide

nickel oxide

titanium dioxide

- **Hazard statements**

H302 Harmful if swallowed.

H317 May cause an allergic skin reaction.

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- H341 Suspected of causing genetic defects.
- H350 May cause cancer.
- H361 Suspected of damaging fertility or the unborn child.
- H372 Causes damage to organs through prolonged or repeated exposure.

**Precautionary statements**

- P260 Do not breathe dust/fume/gas/mist/vapors/spray.
- P264 Wash thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.
- P308+P313 IF exposed or concerned: Get medical advice/attention.
- P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
- P363 Wash contaminated clothing before reuse.
- P405 Store locked up.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**Other hazards**

- Avoid breathing sanding dust / swarf.
- Dust generation.

**Results of PBT and vPvB assessment**

- PBT:** Not applicable.
- vPvB:** Not applicable.

**3 Composition/information on ingredients**

**Chemical characterization: Mixtures**

- Description:** Mixture of substances listed below with nonhazardous additions.

**Dangerous components:**

1313-99-1	nickel oxide ☠ Carc. 1A, H350; STOT RE 1, H372; ☠ Eye Irrit. 2A, H319; Skin Sens. 1, H317; Aquatic Chronic 4, H413	≤1%
13463-67-7	titanium dioxide ☠ Carc. 2, H351	≤1%
1314-62-1	vanadium pentoxide ☠ Muta. 2, H341; Carc. 2, H351; Repr. 2, H361; STOT RE 1, H372; ☠ Aquatic Chronic 2, H411; ☠ Acute Tox. 4, H302; Acute Tox. 4, H332; STOT SE 3, H335	≤1%

**Other ingredients:**

- Potassium alumino silicate glass
- Pigments

**4 First-aid measures**

**Description of first aid measures**

- After inhalation:** Supply fresh air and to be sure call for a doctor.
- After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- After eye contact:** Rinse opened eye for several minutes under running water.
- After swallowing:** Immediately call a doctor.

**Information for doctor:**

- Most important symptoms and effects, both acute and delayed** No further relevant information available.

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

- No further relevant information available.

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**5 Fire-fighting measures**

- **Extinguishing media**
- **Suitable extinguishing agents:** Product is not flammable
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

\* **6 Accidental release measures**

- **Personal precautions, protective equipment and emergency procedures** See Section 8.
- **Environmental precautions:** No special measures required.
- **Methods and material for containment and cleaning up:**  
Pick up mechanically.  
Ensure adequate ventilation.  
Use appropriate Personal Protective Equipment (PPE).
- **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.

\* **7 Handling and storage**

- **Handling:**
- **Precautions for safe handling**  
Avoid contact with skin and eyes. Do not swallow. Avoid generating dust. Do not breathe dust/fume/gas/mist/vapors/spray.  
Prevent formation of dust.  
Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Store at room temperature.
- **Specific end use(s)** No further relevant information available.

\* **8 Exposure controls/personal protection**

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**

<b>Components with limit values that require monitoring at the workplace:</b>	
<b>1313-99-1 nickel oxide</b>	
PEL (USA)	Long-term value: 1 mg/m <sup>3</sup> as Ni
REL (USA)	Long-term value: 0.015 mg/m <sup>3</sup> as Ni; See Pocket Guide App. A
TLV (USA)	Long-term value: 0.2 mg/m <sup>3</sup> as Ni; inhalable fraction

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**13463-67-7 titanium dioxide**

PEL (USA)	Long-term value: 15* mg/m <sup>3</sup> *total dust
REL (USA)	See Pocket Guide App. A
TLV (USA)	Long-term value: 10 mg/m <sup>3</sup> withdrawn from NIC

**1314-62-1 vanadium pentoxide**

PEL (USA)	Ceiling limit value: 0.5* 0.1** mg/m <sup>3</sup> as V2O5,*respirable dust **fume
REL (USA)	Ceiling limit value: 0.05* mg/m <sup>3</sup> *15-min, except V metal and carbide
TLV (USA)	Long-term value: 0.05* mg/m <sup>3</sup> *as inhalable fraction

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:** Do not inhale dust / smoke / mist.
- **Breathing equipment:**  
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
- **Penetration time of glove material**  
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:**



Tightly sealed goggles

**9 Physical and chemical properties**

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**

<b>Form:</b>	Powder
<b>Color:</b>	Colored
<b>Odor:</b>	Odorless

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· <b>Odor threshold:</b>	Not determined.
· <b>pH-value:</b>	Not determined
· <b>Change in condition</b>	
<b>Melting point/Melting range:</b>	Not determined
<b>Boiling point/Boiling range:</b>	Not determined
· <b>Flash point:</b>	Not determined
· <b>Flammability (solid, gaseous):</b>	Not determined.
· <b>Decomposition temperature:</b>	Not determined.
· <b>Auto igniting:</b>	Not determined.
· <b>Danger of explosion:</b>	Product does not present an explosion hazard.
· <b>Explosion limits:</b>	
<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.
· <b>Vapor pressure:</b>	Not determined
· <b>Density:</b>	Not determined
· <b>Relative density</b>	Not determined
· <b>Vapor density</b>	Not determined
· <b>Evaporation rate</b>	Not determined
· <b>Solubility in / Miscibility with</b>	
<b>Water:</b>	Insoluble.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined
· <b>Viscosity:</b>	Not determined
· <b>Dynamic:</b>	Not determined
· <b>Kinematic:</b>	Not determined
· <b>Other information</b>	No further relevant information available.

## 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used and stored according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** None

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

**1314-62-1 vanadium pentoxide**

Oral	LD50	10 mg/kg (rat)
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- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.

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- **Sensitization:** Sensitization possible through skin contact.
- **Additional toxicological information:**  
The product shows the following dangers according to internally approved calculation methods for preparations:  
Harmful

· <b>IARC (International Agency for Research on Cancer)</b>		
1313-99-1	nickel oxide	1
13463-67-7	titanium dioxide	2B
1314-62-1	vanadium pentoxide	2B
· <b>NTP (National Toxicology Program)</b>		
1313-99-1	nickel oxide	K

**12 Ecological information**

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
Water hazard class 2 (Self-assessment): hazardous for water  
Do not allow product to reach ground water, water course or sewage system.  
Danger to drinking water if even extremely small quantities leak into the ground.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

**13 Disposal considerations**

- **Waste treatment methods**
- **Recommendation:**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

**14 Transport information**

· <b>UN-Number</b>	
· <b>DOT, ADR, ADN, IMDG, IATA</b>	Void
· <b>UN proper shipping name</b>	
· <b>DOT, ADR, ADN, IMDG, IATA</b>	Void
· <b>Transport hazard class(es)</b>	
· <b>DOT, ADR, ADN, IMDG, IATA</b>	
· <b>Class</b>	Void
· <b>Packing group</b>	
· <b>DOT, ADR, IMDG, IATA</b>	Void

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· <b>Environmental hazards:</b>	Not applicable.
· <b>Special precautions for user</b>	Not applicable.
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
· <b>UN "Model Regulation":</b>	Void

**15 Regulatory information**

· <b>Section 355 (extremely hazardous substances):</b>	
1314-62-1	vanadium pentoxide

· <b>Section 313 (Specific toxic chemical listings):</b>	
1313-99-1	nickel oxide
1314-62-1	vanadium pentoxide

· **SARA 311/312:** See Section 2 for the information on physical and health hazards.

· **Proposition 65**

· <b>Chemicals known to cause cancer:</b>	
1313-99-1	nickel oxide
13463-67-7	titanium dioxide
1314-62-1	vanadium pentoxide

· <b>Chemicals known to cause reproductive toxicity for females:</b>	
None of the ingredients is listed.	

· <b>Chemicals known to cause reproductive toxicity for males:</b>	
None of the ingredients is listed.	

· <b>Chemicals known to cause developmental toxicity:</b>	
None of the ingredients is listed.	

· <b>EPA (Environmental Protection Agency)</b>	
None of the ingredients is listed.	

· <b>TLV (Threshold Limit Value established by ACGIH)</b>		
1313-99-1	nickel oxide	A1
13463-67-7	titanium dioxide	A4
1314-62-1	vanadium pentoxide	A3

· <b>NIOSH-Ca (National Institute for Occupational Safety and Health)</b>	
1313-99-1	nickel oxide
13463-67-7	titanium dioxide

· **Precautionary statements**



**WARNING:** This product can expose you to chemicals including nickel oxide, titanium dioxide and vanadium oxide which are known to the State of California to cause cancer. For more information go to <https://www.p65warnings.ca.gov/>.

- **National regulations:**
- **Additional classification according to Decree on Hazardous Materials:**  
Carcinogenic hazardous material group III (dangerous).

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**Information about limitation of use:**

Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation.  
Exceptions can be made by the authorities in certain cases.

**16 Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

**NFPA ratings (scale 0 - 4)**



Health = 1  
Fire = 0  
Reactivity = 0

**HMIS-ratings (scale 0 - 4)**



Health = \*1  
Fire = 0  
Reactivity = 0

**Abbreviations and acronyms:**

- Acute Tox. 4: Acute toxicity – Category 4
- Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
- Skin Sens. 1: Skin sensitisation – Category 1
- Muta. 2: Germ cell mutagenicity – Category 2
- Carc. 1A: Carcinogenicity – Category 1A
- Carc. 2: Carcinogenicity – Category 2
- Repr. 2: Reproductive toxicity – Category 2
- STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
- STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
- Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2
- Aquatic Chronic 4: Hazardous to the aquatic environment - long-term aquatic hazard – Category 4

**\* Data compared to the previous version altered.**