

# Material Safety Data Sheet

## According to 91/155 EC

Printing date 13.10.2003

Reviewed on 27.02.2003

### 1 Identification of substance:

· **Product details:**

· **Trade name:** *Valiant / Valiant PH.D Powder*

· **Application of the substance / the preparation:** *Dental filling material*

· **Manufacturer/Supplier:**

*DENTSPLY DeTrey GmbH*

*De-Trey-Str. 1*

*D-78467 Konstanz*

*GERMANY*

*Tel.:*

*+49-7531-583-0*

*Fax:*

*+49-7531-583-104*

· **Further information obtainable from:**

- *Departement Analytical Research / Research & Development for technical information*
- *Departement Marketing & Sales for distribution of the safety data sheets*

### 2 Composition/Data on components:

· **Chemical characterization**

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

· **Dangerous components:**

<i>CAS: 7440-22-4</i> <i>EINECS: 231-131-3</i>	<i>silver</i>	<i>25-50%</i>
<i>CAS: 7440-50-8</i> <i>EINECS: 231-159-6</i>	<i>copper</i>	<i>25-50%</i>
<i>CAS: 7440-31-5</i> <i>EINECS: 231-141-8</i>	<i>tin</i>	<i>10-25%</i>

· **Additional information:** *For the wording of the listed risk phrases refer to section 16.*

### 3 Hazard identification

· **Hazard description:** *not applicable*

· **Information concerning to particular hazards to man and environment**

*The product does not have to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.*

· **Classification system**

*The classification is according to the latest editions of the EU-lists, and extended by company and literature data.*

### 4 First aid measures

· **General information:** *No special measures required.*

· **After inhalation:** *Supply fresh air; consult doctor in case of complaints.*

· **After skin contact:** *Generally the product does not irritate the skin.*

· **After eye contact:** *Rinse opened eye for several minutes under running water.*

· **After swallowing**

*Rinse out mouth and then drink plenty of water.*

*If symptoms persist consult doctor.*

### 5 Fire fighting measures

· **Suitable extinguishing agents**

*CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.*

· **Protective equipment:** *No special measures required.*

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### 6 Accidental release measures

- **Person-related safety precautions:** Not required.
- **Measures for environmental protection:** Do not allow to enter sewers/ surface or ground water.
- **Measures for cleaning/collecting:** Pick up mechanically.
- **Additional information:** No dangerous substances are released.

### 7 Handling and storage

- **Handling** Product is intended for dental use only.
- **Information for safe handling:**  
No special measures required.  
Observe normal care for working with chemicals.
- **Information about fire - and explosion protection:** No special measures required.
- **Storage**
- **Requirements to be met by storerooms and receptacles:** Store only in the original receptacle.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Protect from humidity and water.

### 8 Exposure controls and personal protection gear

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

- **Ingredients with limit values that require monitoring at the workplace:**

7440-22-4 silver	
OEL	Short-term value: 0.03 mg/m <sup>3</sup> Long-term value: 0.01 mg/m <sup>3</sup>
7440-50-8 copper	
OEL	0.2 mg/m <sup>3</sup>
7440-31-5 tin	
OEL	0.1 mg/m <sup>3</sup> , 0.2 ml/m <sup>3</sup>

- **Additional information:** The lists valid during the making were used as basis.

- **Personal protective equipment**

- **General protective and hygienic measures**

The usual precautionary measures are to be adhered to when handling chemicals.

- **Respiratory protection:** Not required.

- **Protection of hands:**

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 through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:** Safety glasses

- **Body protection:** Protective work clothing.

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Trade name: Valiant / Valiant PH.D Powder

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### 9 Physical and chemical properties:

#### · General Information

<b>Form:</b>	Powder
<b>Colour:</b>	Grey
<b>Odour:</b>	Odourless

#### · Change in condition

**Melting point/Melting range:** undetermined  
**Boiling point/Boiling range:** undetermined

· **Flash point:** Not applicable

· **Self-igniting:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Density:** Not determined

#### · Solubility in / Miscibility with

**Water:** Insoluble

#### · Solvent content:

**Organic solvents:** 0.0 %

· **Solids content:** 100.0 %

### 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Dangerous reactions** Reacts with oxygen
- **Dangerous decomposition products:** No dangerous decomposition products known

### 11 Toxicological information

- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**

The product is not subject to classification according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version.

When used and handled according to specifications, the product does not have any harmful effects to our experience and the information provided to us.

### 12 Ecological information:

#### · General notes:

Water danger class 3 (German Regulation) (Self-assessment): extremely hazardous for water.  
 Do not allow product to reach ground water, water course or sewage system, even in small quantities.

### 13 Disposal considerations

#### · Product:

#### · Recommendation

Dispose the product after activation to the amalgame into a labelled, tightly closing container.  
 Regard the local official regulations.

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**Trade name: Valiant / Valiant PH.D Powder**

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- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

### 14 Transport information

- **Land transport ADR/RID (cross-border)**
- **ADR/RID class:** -

- **Maritime transport IMDG:**
- **IMDG Class:** -
- **Marine pollutant:** No

- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** -

### 15 Regulations

- **Labelling according to EU guidelines:**  
Observe the general safety regulations when handling chemicals  
The product is not subject to identification regulations under EU Directives and the Ordinance on Hazardous Materials (German GefStoffV).

- **National regulations**

- **Technical instructions (air):**

Class	Share in %
III	0.5

- **Waterhazard class:** Water danger class 3 (Self-assessment): extremely hazardous for water.

### 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.*

- **Department issuing MSDS:** Analytical Research

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# Material Safety Data Sheet

## According to 91/155 EC

Printing date 17.02.2004

Reviewed on 17.02.2004

### 1 Identification of substance:

- **Product details:**
- **Trade name:** *Mercury/Mercurio/Mercure/Quecksilber/Kviksolv*
- **Application of the substance / the preparation** *mercury for preparing NON-GAMMA-2-AMALGAM*
- **Manufacturer/Supplier:**  
*DENTSPLY DeTrey GmbH  
 De-Trey-Str. 1  
 D-78467 Konstanz  
 GERMANY  
 Tel.: +49-7531-583-0  
 Fax: +49-7531-583-104*
- **Further information obtainable from:**
  - *Departement Analytical Research / Research & Development for* *technical information*
  - *Departement Marketing & Sales for distribution of the safety data* *sheets*

### 2 Composition/Data on components:

- **Chemical characterization:**
- **CAS No. Description:**  
*7439-97-6 mercury*
- **Identification number(s):**
- **EINECS Number:** *2311067*
- **EU Number:** *080-001-00-0*

### 3 Hazard identification

- **Hazard description:**  
*T Toxic  
 N Dangerous for the environment*
- **Information concerning to particular hazards to man and environment**  
*R 23 Toxic by inhalation.  
 R 33 Danger of cumulative effects.  
 R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.*

### 4 First aid measures

- **General information**  
*Immediately remove any clothing soiled by the product.  
 Remove breathing equipment only after contaminated clothing have been completely removed.  
 In case of irregular breathing or respiratory arrest provide artificial respiration.*
- **After inhalation**  
*Supply fresh air or oxygen; call for doctor.  
 In case of unconsciousness place patient stably in side position for transportation.*
- **After skin contact** *Immediately wash with water and soap and rinse thoroughly.*
- **After eye contact** *Rinse opened eye for several minutes under running water. Then consult a doctor.*
- **After swallowing** *If symptoms persist consult doctor.*

### 5 Fire fighting measures

- **Suitable extinguishing agents**  
*CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.*
- **Protective equipment:** *Mount respiratory protective device.*

### 6 Accidental release measures

- **Person-related safety precautions:** *Not required.*

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# Material Safety Data Sheet

## According to 91/155 EC

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Trade name: Mercury/Mercurio/Mercure/Quecksilber/Kviksolv

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- **Measures for environmental protection:**  
Inform respective authorities in case of seepage into water course or sewage system.  
Do not allow to enter sewers/ surface or ground water.
- **Measures for cleaning/collecting:**  
Dispose contaminated material as waste according to item 13.  
Pick up mechanically.  
Ensure adequate ventilation.

### 7 Handling and storage

- **Handling** Product is intended for dental use only.
- **Information for safe handling:**  
Ensure good ventilation/exhaustion at the workplace.  
Observe normal care for working with chemicals.  
Open the capsules only after activation in a caps mixer!  
Take notice of the directions for use!
- **Information about fire - and explosion protection:** Keep respiratory protective device available.
- **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:** Keep receptacle tightly sealed.

### 8 Exposure controls and personal protection gear

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

- **Ingredients with limit values that require monitoring at the workplace:**

7439-97-6 mercury

OEL	Short-term value: 0.03 mg/m <sup>3</sup>
	Long-term value: 0.01 mg/m <sup>3</sup>

- **Additional information:** The lists valid during the making were used as basis.
- **Personal protective equipment**
- **General protective and hygienic measures**  
Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing  
Wash hands before breaks and at the end of work.  
Store protective clothing separately.
- **Respiratory protection:**  
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
- **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.
- **Penetration time of glove material**  
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Safety glasses

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Reviewed on 17.02.2004

Trade name: Mercury/Mercurio/Mercure/Quecksilber/Kviksolv

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· **Body protection:** Protective work clothing.

### 9 Physical and chemical properties:

#### · General Information

<b>Form:</b>	Fluid
<b>Colour:</b>	Grey
<b>Odour:</b>	Odourless

#### · Change in condition

<b>Melting point/Melting range:</b>	-38.86°C
<b>Boiling point/Boiling range:</b>	356°C

<b>Flash point:</b>	Not applicable
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<b>Danger of explosion:</b>	Product does not present an explosion hazard.
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<b>Vapour pressure at 20°C:</b>	0.00163 hPa
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<b>Density at 20°C:</b>	13.54 g/cm <sup>3</sup>
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#### · Solubility in / Miscibility with

<b>Water:</b>	Not miscible or difficult to mix
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### 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Dangerous reactions** No dangerous reactions known
- **Dangerous decomposition products:** No dangerous decomposition products known

### 11 Toxicological information

#### · Acute toxicity:

#### · LD/LC50 values relevant for classification:

7439-97-6 mercury

Oral LD50 | 29 mg/qm/30h mg/kg (rab)

#### · Primary irritant effect:

- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.

### 12 Ecological information:

#### · Ecotoxicological effects:

- **Remark:** Very toxic for fish

#### · General notes:

Water danger class 3 (German Regulation) (Assessment by list): extremely hazardous for water.  
Do not allow product to reach ground water, water course or sewage system, even in small quantities.  
Danger to drinking water if even extremely small quantities leak into the ground.  
Also poisonous for fish and plankton in water bodies.  
Very toxic for aquatic organisms

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Trade name: Mercury/Mercurio/Mercure/Quecksilber/Kviksolv

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### 13 Disposal considerations

- **Product:**
- **Recommendation**



Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Dispose the product after activation to the amalgame into a labelled, tightly closing container. Regard the local official regulations.

- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

### 14 Transport information

- **Land transport ADR/RID (cross-border)**



- **ADR/RID class:** 8 (C9) Corrosive substances.
- **Danger code (Kemler):** 80
- **UN-Number:** 2809
- **Packaging group:** III
- **Hazard label:** 8
- **Description of goods:** 2809 Mercury

- **Maritime transport IMDG:**



- **IMDG Class:** 8
- **UN Number:** 2809
- **Label:** 8
- **Packaging group:** III
- **EMS Number:** F-A,S-B
- **Marine pollutant:** No
- **Proper shipping name:** MERCURY

- **Air transport ICAO-TI and IATA-DGR:**



- **ICAO/IATA Class:** 8
- **UN/ID Number:** 2809
- **Label:** 8
- **Packaging group:** III
- **Proper shipping name:** MERCURY

### 15 Regulations

- **Labelling according to EU guidelines:**

The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials

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# Material Safety Data Sheet

## According to 91/155 EC

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Reviewed on 17.02.2004

**Trade name:** Mercury/Mercurio/Mercure/Quecksilber/Kviksolv

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· **Code letter and hazard designation of product:**



T Toxic

N Dangerous for the environment

· **Risk phrases:**

23 Toxic by inhalation.

33 Danger of cumulative effects.

50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

· **Safety phrases:**

1/2 Keep locked up and out of the reach of children.

7 Keep container tightly closed.

45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

60 This material and its container must be disposed of as hazardous waste.

61 Avoid release to the environment. Refer to special instructions/safety data sheets.

· **National regulations**

· **Waterhazard class:** Water danger class 3 (Assessment by list): extremely hazardous for water.

### 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.

· **Department issuing MSDS:** Analytical Research

· **Contact:** HotLine for urgent technical support: +49-7531-583-333