


# Material Safety Data Sheet

according to 1907/2006/EC, Article 31  
Hoffmann Dental Manufaktur GmbH

Reviewed on: 1 June 2012

1. Identification of substance and manufacturer's name			
<b>Product details/Trade name:</b>			
			
<b>HOFFMANN'S</b> READY2PROTECT Copperioncement, LIQUID			
<b>Manufacturer/Supplier:</b>			
Wangenheimstr. 37/39, D-14193 Berlin Telephone: +49 (0) 30 / 82 00 99 0 Fax: +49 (0) 30 / 82 28 14 5			
<b>Information department/Emergency information:</b>			
Quality assurance department e-mail: sicherheit@hoffmann-dental.com			
2. Composition/Data on ingredients			
<b>Chemical characterization:</b>			
<b>Description:</b> Mixture of below-mentioned substances with innocuous additions.			
<b>Hazardous ingredients:</b>			
CAS: 1314-13-2 EINECS: 215-222-5	Zinc Oxide	Warning; H411 N; R 51/53	10 – 15 %
CAS: 7664-38-2 EINECS: 231-633-2	Ortho-Phosphoric Acid	Danger; H314 C; R 34	> 50 %
3. Hazards identification			
<b>Hazard designation:</b>			
N	Hazardous to the environment		
C	Corrosive		
<b>Special danger warning for human and environment:</b>			
The product has to be labelled due to the calculation procedure of the „EU-Directive of the General Classification of Preparations“ in the latest valid version.			
H314:	Causes severe skin burns and eye damage.		
H411:	Toxic to aquatic life with long lasting effects.		
R 34:	Causes burns		
R 51/53:	Toxic to aquatic organisms may cause long-term harmful effects in the waters.		
<b>Classification system:</b>			
The classification is in compliance with the current EU-lists, but is also completed with details given by technical literature and company.			
4. First aid measures			
<b>General information:</b>	Remove contaminated clothes immediately.		
- After skin contact:	Remove with soap by washing under the running water.		
- After eye contact:	Immediately flush opened eye under running water for several minutes (at least 10 min.), get prompt medical attention.		
- After swallowing:	Drink plenty of water, do not induce vomiting (danger of perforation), and consult a physician immediately.		
- After inhaling:	Not applicable.		
5. Fire fighting measures			
<b>Suitable extinguishing agents:</b>	Not applicable		
<b>Special protective equipment:</b>	No special measures are required.		

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according to 1907/2006/EC, Article 31  
Hoffmann Dental Manufaktur GmbH

6. Accidental release measures										
<b>Person-related safety precautions:</b>	Wear personal protective clothing.									
<b>Environmental precautions:</b>	Inform responsible authorities in case of spillage into waters or sewage system. Dilute with plenty of water.									
<b>Methods of cleaning up:</b>	Absorb with liquid-binding material (chemical binders; use cellulose for small amounts ). Use neutralizing agent.									
<b>Additional information:</b>	See chapter 8 for information about personal protective equipment. See section 13 for disposal information.									
7. Handling and storage										
<b>Handling:</b>	The product is only for dental use.									
- <b>Information about safe handling:</b>	Keep containers tightly closed.									
- <b>Information about protection against explosion and fire:</b>	No special measures are required.									
<b>Storage:</b>										
- <b>Information about storage:</b>	Store dry and tightly closed in original container.									
- <b>Information about storage in one common storage facility:</b>	Not required.									
- <b>Requirements for storage rooms:</b>	No special requirements.									
8. Exposure controls and personal protection										
<b>Data on limiting values that require monitoring at the workplace:</b>										
<table border="1"><thead><tr><th colspan="3">Ingredients with limiting values that require monitoring at the workplace</th></tr></thead><tbody><tr><td>CAS 7664-38-2</td><td>Ortho-Phosphoric Acid</td><td>(EU-No.: 231-633-2)</td></tr><tr><td>TLV</td><td>1 mg/m<sup>3</sup></td><td>EU</td></tr></tbody></table>		Ingredients with limiting values that require monitoring at the workplace			CAS 7664-38-2	Ortho-Phosphoric Acid	(EU-No.: 231-633-2)	TLV	1 mg/m <sup>3</sup>	EU
Ingredients with limiting values that require monitoring at the workplace										
CAS 7664-38-2	Ortho-Phosphoric Acid	(EU-No.: 231-633-2)								
TLV	1 mg/m <sup>3</sup>	EU								
<b>Technical protective measures:</b> Not required.										
<b>Personal protective equipment:</b>										
<b>Respiratory protection:</b> Not required.										
<b>Skin protection:</b> Wear suitable protective gloves; the glove material has to be impermeable and resistant to the product/the substance/the preparation. Due to absent tests no recommendations about the glove material can be given for the product/the preparation/the chemical mixture. The selection of the glove material should be in consideration of the breakthrough time, kinds of permeation and the degradation.										
<b>Material of gloves:</b> The selection of the suitable gloves does not only depend on material but also on further quality characteristics 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 to be checked prior to the application. Suitable glove material is e. g. butyl rubber, fluorocarbon rubber (Viton), natural rubber (Latex). For the permanent contact of a maximum of 15 minutes gloves made of PVC or PE are suitable.										
<b>Penetration time of glove material:</b> The exact breakthrough time is to be obtained from the manufacturer of the protective gloves and has to be observed.										
<b>Eye protection:</b> Protective goggles with side protection are recommended.										
<b>Body protection:</b> Lightweight protective clothing.										
<b>General protective and hygienic measures:</b> The usual precautionary measures for contact with chemicals are to observe.										

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Hoffmann Dental Manufaktur GmbH

## 9. Physical and chemical properties

<b>General information:</b>	
<b>Form:</b>	Liquid
<b>Colour:</b>	Colourless
<b>Odour:</b>	Odourless
<b>Change in state</b>	
<b>Boiling point/boiling range:</b>	> 100 °C
<b>Melting point/melting range:</b>	Not determined
<b>Flashpoint:</b>	Not applicable
<b>pH-value:</b>	1 – 2
<b>Autoflammability:</b>	Product does not self ignite
<b>Danger of explosion:</b>	Product is not explosive
<b>Density at 20 °C:</b>	1,8 g/cm <sup>3</sup>
<b>Solubility in water:</b>	Fully miscible
<b>Solvent content:</b>	
<b>Organic solvents:</b>	0,0 %
<b>Water:</b>	25 %
<b>VOC EU:</b>	0,0 %
<b>Solids content:</b>	19 %

## 10. Stability and reactivity

<b>Conditions to be avoided:</b>	No decomposition when used according to regulations.
<b>Hazardous reactions:</b>	No hazardous reactions are known.
<b>Hazardous decomposition products:</b>	No hazardous decomposition products are known.

## 11. Toxicological information

Values given below refer to basic substance phosphoric acid

**Acute toxicity:** In our experience the product does not cause any noxious effects when used and handled according to regulations.

LD50 (dermal rabbit):	2740 mg/kg (referring to pure substance)
LDLo (oral, rat):	1530 mg/kg (referring to pure substance)
LC50/4h (relating to inhalation, rat)	> 850 mg/l (referring to pure substance)

**Specific symptoms in animal experiments:**

Test for eye irritation (rabbit):	Corrosive effect
Test for skin irritation (rabbit):	Corrosive effect

**From subacute to chronic toxicity :**

Sensitisation:	
Research on human:	No sensitisation effect
Mutagenicity:	
Ames-Test:	Negative; no mutagenic effect.

**Irritation effects on human:**

- Swallowing:	Strong corrosive effect on mouth and throat.
- Skin:	Corrosive effect.
- Eye:	Strong corrosive effect.

## 12. Ecological information

<b>Referring to main substance:</b>	
<b>Biological decomposition:</b>	Is not determined.
<b>Ecotoxicological information:</b>	Quantitative data about ecological effects are not available for this product.
<b>Biological effects:</b>	Very toxic to aquatic organisms. May cause long-term harmful effects in the waters.
<b>General information:</b>	Prevent releasing into waters, sewage system and soil. Water hazard class 2 (self-assessment): hazardous to waters.

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Hoffmann Dental Manufaktur GmbH

## 13. Disposal details



**Product:** Do not dispose of together with domestic waste.  
Prevent releasing into sewage system.  
**Uncleaned packaging:** Dispose of in accordance with official regulations.

### European Waste Catalogue

06 01 04 Phosphoric and phosphorous acid

## 14. Transport information

### Land transport ADR/RID and GGVS/GGVE (cross-border/national):



**ADR/RID-GGVS/E class:** 8 (C1) corrosive substances  
**Kemler-Number:** 80  
**UN-Number:** 1805  
**Packaging group:** III  
**Hazard label:** 8  
**Proper shipping name:** 1805 PHOSPHORIC ACID, LIQUID

### Maritime transport IMDG/GGV sea:



**IMDG/GGV sea class:** 8  
**UN-Number:** 1805  
**Label:** 8  
**Packaging group:** III  
**EMS-Number:** F-A, S-B  
**MARINE POLLUTANT:** No  
**Proper shipping name:** PHOSPHORIC ACID, SOLUTION

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



**ICAO / IATA class:** 8  
**UN/ID Number:** 1805  
**Label:** 8  
**Packaging group:** III  
**Proper shipping name:** PHOSPHORIC ACID, SOLUTION

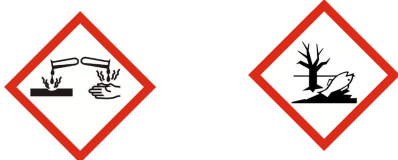
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## 15. Regulations according to GHS

**Signal word:** Danger

**Hazard pictogram:**



**Hazard Statements:**

H314: Causes severe skin burns and eye damage

H411: Toxic to aquatic life with long lasting effects

**Precautionary Statements:**

P270: Do not eat, drink or smoke when using this product

P273: Avoid release to the environment.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P303 + P361 + P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.

P310: Immediately call a POISON CENTER or doctor/physician.

P363: Wash contaminated clothing before reuse

P391: Collect spillage.

## 16. Regulations

**Labelling according to the EU-Directive:**

The product has been classified and labelled in accordance with EU-Directives / Ordinance on Hazardous Materials (GefStoffV)

**Labels:**



N Hazardous to the environment

C Corrosive

**Risk phrases:** 34 Causes burns

51/53 Toxic to aquatic organisms, may cause long-term harmful effects in the waters.

**Safety phrases:** 20 Do not drink and eat when using.

24 Avoid skin contact.

25 Avoid eye contact.

26-28 In case of eye contact get prompt medical attention; contaminated clothing must be removed immediately; in case of skin contact wash skin with plenty of water immediately.

36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

45 In case of accident or if you feel unwell consult a physician immediately.

57 Use appropriate container to prevent environmental contamination.

**National regulations:**

Water hazard class: 2 (hazardous to the waters), self-assessment.

## 17. Other information

This information is based on our present knowledge. However, they do not represent a guarantee for any product features and do not establish a contractual relationship. It is to emphasize that there are no warnings at all about human health risks by Zinc Oxide as far as the product is used according to regulations.

**Department issuing MSDS:** Quality assurance department

# Material Safety Data Sheet

according to 1907/2006/EC, Article 31  
Hoffmann Dental Manufaktur GmbH

Reviewed on: 1 June 2012

## 1. Identification of substance and manufacturer's name

### Product details/Trade name:



**HOFFMANN'S** READY2PROTECT Copperioncement, POWDER

### Manufacturer/Supplier:

Wangenheimstr. 37/39, D-14193 Berlin

Telephone: +49 (0) 30 / 82 00 99 0

Fax: +49 (0) 30 / 82 28 14 5

### Information department/Emergency information:

Quality assurance department

e-mail: [sicherheit@hoffmann-dental.com](mailto:sicherheit@hoffmann-dental.com)

## 2. Composition/Data on ingredients

### Chemical characterization:

**Description:** Mixture of below-mentioned substances with innocuous additions.

Hazardous ingredients:			
CAS: 1314-13-2 EINECS: 215-222-5	Zinc Oxide	Warning; H410 N; R 50/53	80 - 90 %
CAS: 1309-48-4 EINECS: 215-171-9	Magnesium Oxide		5 - 10 %
CAS: 7789-75-5 EINECS: 232-188-7	Calcium Fluoride		0 - 5 %

## 3. Hazards identification

### Hazard designation:

N Hazardous to the environment.

### Special danger warning for human and environment:

The product has to be labelled due to the calculation procedure of the „EU-Directive of the General Classification of Preparations“ in the latest valid version.

H410: Very toxic to aquatic life with long lasting effects.

R 50/53: Very toxic to aquatic organisms, may cause long-term harmful effects in the waters.

### Classification system:

The classification is in compliance with the current EU-lists, but is also completed with details given by technical literature and company.

## 4. First aid measures

- **After inhaling:** Fresh air.
- **After skin contact:** Remove by washing under the running water.
- **After eye contact:** Flush opened eye with running water for several minutes. Consult an eye specialist.
- **After swallowing:** (A plenty of substance) In case of feeling unwell consult a physician immediately.

## 5. Fire fighting measures

- Suitable extinguishing agents:** Not applicable
- Special protective equipment:** No special measures are required.

# Material Safety Data Sheet

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Hoffmann Dental Manufaktur GmbH

6. Accidental release measures																						
<b>Person-related safety precautions:</b>	Avoid inhaling of powder.																					
<b>Environmental precautions:</b>	Prevent any spillage from entering the sewage system.																					
<b>Methods of cleaning up:</b>	Pick up dry powder and dispose of as usual. Clean subsequently and prevent the development of dust.																					
7. Handling and storage																						
<b>Handling:</b>	The product is only for dental use.																					
- <b>Information about safe handling:</b>	No special measures are required.																					
- <b>Information about protection against explosion and fire:</b>	No special measures are required.																					
<b>Storage:</b>																						
- <b>Information about storage:</b>	Store dry and tightly closed in original container.																					
- <b>Information about storage in one common storage facility:</b>	Not required.																					
- <b>Requirements for storage rooms:</b>	No special requirements.																					
8. Exposure controls and personal protection																						
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1314-13-2	Zinc Oxide	(EU-No.: 215-222-5)																				
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1309-48-4	Magnesium Oxide	(EU-No.: 215-171-9)																				
TLV	6 A mg/m <sup>3</sup>	smoke; DFG																				
7789-75-5	Calcium Fluoride	(EU-No.: 232-188-7)																				
TLV	2,5 E mg/m <sup>3</sup> as F	DFG																				
<b>Technical protective measures:</b> Not required.																						
<b>Notice:</b> When used according to regulations, no smoke containing zinc is released.																						
<b>Personal protective equipment</b>																						
<b>Respiratory protection:</b> Not required.																						
<b>Skin protection:</b> Not required necessarily; the glove material has to be impermeable and resistant to the product/the substance/the preparation. Due to absent tests no recommendations about the glove material can be given for the product/the preparation/the chemical mixture. The selection of the glove material should be in consideration of the breakthrough time, kinds of permeation and the degradation.																						
<b>Material of gloves:</b> The selection of the suitable gloves does not only depend on material but also on further quality characteristics 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 to be checked prior to the application.																						
<b>Penetration time of glove material:</b> The exact breakthrough time is to be obtained from the manufacturer of the protective gloves and has to be observed.																						
<b>For the permanent contact in application areas without increased risk of injury (e. g. lab) gloves made of the following materials are suitable:</b> Natural rubber (Latex).																						
<b>For the permanent contact of a maximum of 15 minutes gloves made of the following material are suitable:</b> Natural rubber (Latex).																						
<b>Eye protection:</b> Recommended: Protective goggles with side protection.																						
<b>Body protection:</b> Lightweight protective clothing.																						
<b>General protective and hygienic measures:</b> The usual precautionary measures for contact with chemicals are to observe.																						

# Material Safety Data Sheet

according to 1907/2006/EC, Article 31  
Hoffmann Dental Manufaktur GmbH

## 9. Physical and chemical properties

<b>General information:</b>	
<b>Form:</b>	Powder
<b>Colour:</b>	Whitish
<b>Odour:</b>	Odourless
<b>Change in state</b>	
<b>Boiling point/boiling range:</b>	Not applicable
<b>Melting point/melting range:</b>	> 1.200 °C
<b>Flash point:</b>	Not applicable
<b>pH-value:</b>	Not applicable
<b>Autoflammability:</b>	The product does not self ignite.
<b>Danger of explosion:</b>	Product is not explosive
<b>Bulk density:</b>	500 kg/m <sup>3</sup>
<b>Solubility in water:</b>	Insoluble
<b>Solvent content:</b>	
<b>Organic solvents:</b>	0,0 %

## 10. Stability and reactivity

<b>Conditions to be avoided:</b>	No decomposition when used according to regulations.
<b>Hazardous reactions:</b>	No hazardous reactions are known.
<b>Hazardous decomposition products:</b>	No hazardous decomposition products are known.

## 11. Toxicological information

Values given below refer to basic substance Zinc Oxide.

### From subacute to chronic toxicity :

Sensitisation:	Research on human: no sensitising effect
Mutagenicity Test: Ames-Test:	Negative; no mutagenic effect.

**Additional toxicological information:** In our experience and according to the literature provided to us the product does not cause any noxious effects when used and handled according to regulations.

## 12. Ecological information

### Referring to main substance:

<b>Biological decomposition:</b>	Is not determined.
<b>Ecotoxicological information:</b>	Quantitative data about ecological effects are not available for this product.
<b>Biological effects:</b>	Very toxic to aquatic organisms. May cause long-term harmful effects in the waters.
<b>General information:</b>	Prevent releasing into waters, sewage system and soil. Water hazard class 2 (self-assessment): hazardous to waters.

## 13. Disposal details



<b>Product:</b>	Do not dispose of together with domestic waste. Prevent releasing into sewage system.
<b>Uncleaned packaging:</b>	Dispose of in accordance with official regulations.

<b>European Waste Catalogue</b>	
18 01 06	Chemicals containing or consisting of hazardous substances

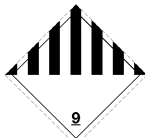


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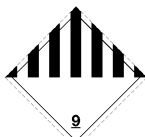
## 14. Transport information

### Land transport ADR/RID and GGVS/GGVE (cross-border/national):



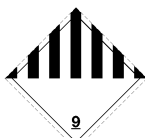
**ADR/RID-GGVS/E class:** 9 (M7) Miscellaneous hazardous substances and items  
**Kemler-Number:** 90  
**UN-Number:** 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE  
**Packaging group:** III  
**Hazard label:** 9  
**Proper shipping name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (ZINC OXIDE)

### Maritime transport IMDG/GGV sea:



**IMDG/GGV sea class:** 9  
**UN-Number:** 3077  
**Label:** 9  
**Packaging group:** III  
**EMS-Number:** F-A, S-F  
**MARINE POLLUTANT:** YES  
**Proper shipping name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (ZINC OXIDE)

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



**ICAO / IATA class:** 9  
**UN/ID Number:** 3077  
**Label:** 9  
**Packaging group:** III  
**Proper shipping name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (ZINC OXIDE)

## 15. Regulations according to GHS

**Signal word:** WARNING

**Hazard pictogram:**



**Hazard Statements:** H410: Very toxic to aquatic life with long lasting effects  
**Precautionary Statements:** P273: Avoid release to the environment

# Material Safety Data Sheet

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Hoffmann Dental Manufaktur GmbH

## 16. Regulations

### Labelling according to EU-Directive:

The product has been classified and labelled in accordance with EU-Directives / Ordinance on Hazardous Materials (GefStoffV).

### Labels:



N Hazardous to the environment

### Risk phrases:

50/53: Very toxic to aquatic organisms, may cause long-term harmful effects in waters.

### Safety phrases:

57: Use appropriate container to avoid environmental contamination.

### National regulations:

Water hazard class: 2 (hazardous to waters), self-assessment.

## 17. Other information


This information is based on our present level of knowledge. However, they do not represent a guarantee for any product features and do not establish a contractual relationship. It is to emphasize that there are no warnings at all about human health risks by Zinc Oxide as far as the product is used according to regulations.

**Department issuing MSDS:** Quality assurance department

# Material Safety Data Sheet

according to 1907/2006/EC, Article 31  
Hoffmann Dental Manufaktur GmbH

Reviewed on: 08 Mai 2013

<b>1. Identification of substance and manufacturer's name</b>			
<b>Product details/Trade name:</b>			
			
<b>HOFFMANN'S</b> COPAL VARNISH, Liquid			
<b>Manufacturer/Supplier:</b>			
Wangenheimstr. 37/39, D-14193 Berlin			
Telephone: +49 (0) 30 / 82 00 99 0			
Fax: +49 (0) 30 / 82 28 145			
<b>Information department/Emergency information:</b>			
Quality assurance department			
e-mail: sicherheit@hoffmann-dental.com			
<b>2. Composition/Data on ingredients</b>			
<b>Chemical characterization:</b>			
<b>Description:</b> Mixture of below-mentioned substances with innocuous additions.			
<b>Hazardous ingredients:</b>			
CAS: 64-17-5 EINECS: 200-578-6	Resin solution in Ethanol	Danger, H225 F; R 11	> 70 %
<b>3. Hazards identification</b>			
<b>Hazard designation:</b>			
F Highly flammable			
<b>Special danger warning for human and environment:</b>			
The product has to be labelled due to the calculation procedure of the „EU-Directive of the General Classification of Preparations“ in the latest valid version.			
H225: Highly flammable liquid and vapour.			
R 11: Highly flammable			
<b>Classification system:</b>			
The classification is in compliance with the current EU-lists, but is also completed with details given by technical literature and company.			
<b>4. First aid measures</b>			
<b>General warnings:</b>		Remove contaminated clothes immediately.	
- <b>After inhaling:</b>		Fresh air; in case you feel unwell, consult a physician.	
- <b>After skin contact:</b>		Wash with plenty of water; remove contaminated clothes.	
- <b>After eye contact:</b>		Flush opened eye under running water for several minutes.	
- <b>After swallowing:</b>		Get prompt medical attention.	
<b>5. Fire fighting measures</b>			
<b>Suitable extinguishing agents:</b>		CO <sub>2</sub> , foam, sand, powder. Do not use water.	
<b>Special protective equipment:</b>		Staying in dangerous area only with a self-contained breathing apparatus.	
<b>Other information:</b>		Flammable. Vapours are heavier than air. Explosive mixtures with air are already possible at normal temperatures. Containers must be cooled down with sprayed water from a safe distance. Prevent any spillage of water for fire-fighting from entering surface or ground waters. No special measures are required.	

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Hoffmann Dental Manufaktur GmbH

6. Accidental release measures										
<b>Person-related safety precautions:</b>	Do not inhale vapours/aerosols. Provide fresh air in closed areas.									
<b>Environmental precautions:</b>	Prevent any spillage from entering the sewage system, the surface water and the ground water.									
<b>Methods of cleaning up:</b>	Absorb with liquid binding material (chemical binders, use for small amounts cellulose) and dispose of.									
7. Handling and storage										
<b>Handling:</b>	The product is only for dental use.									
- <b>Information about safe handling:</b>	Keep containers tightly closed.									
- <b>Information about protection against explosion and fire:</b>	No special measures are required.									
<b>Storage:</b>										
- <b>Information about storage:</b>	Store tightly closed and dry in original containers.									
- <b>Information about storage in one common storage facility:</b>	The product is highly flammable, therefore do not store together with fire supporting materials.									
- <b>Requirements for storage rooms:</b>	Store tightly closed away from flammable and heat sources at a good ventilated place.									
8. Exposure controls and personal protection										
<b>Data on limiting values that require monitoring at the workplace:</b>										
<table border="1"><thead><tr><th colspan="3">Ingredients with limiting values that require monitoring at the workplace</th></tr></thead><tbody><tr><td>CAS 64-17-5</td><td>ethanol</td><td>(EU-No.: 200-578-6)</td></tr><tr><td>TLV</td><td>960 mg/m<sup>3</sup></td><td>500 ml/m<sup>3</sup> Y; DFG</td></tr></tbody></table>		Ingredients with limiting values that require monitoring at the workplace			CAS 64-17-5	ethanol	(EU-No.: 200-578-6)	TLV	960 mg/m <sup>3</sup>	500 ml/m <sup>3</sup> Y; DFG
Ingredients with limiting values that require monitoring at the workplace										
CAS 64-17-5	ethanol	(EU-No.: 200-578-6)								
TLV	960 mg/m <sup>3</sup>	500 ml/m <sup>3</sup> Y; DFG								
<b>Technical protective measures:</b> not required.										
<b>Personal protective equipment:</b>										
<b>Respiratory protection:</b> Use a respirator in case of exceeding of TLV-values.										
<b>Skin protection:</b> Wear suitable protective gloves. The glove material has to be impermeable and resistant to the product/the substance/the preparation. Due to absent tests no recommendations about the glove material can be given for the product/the preparation/the chemical mixture. The selection of the glove material should be in consideration of the breakthrough time, kinds of permeation and the degradation.										
<b>Material of gloves:</b> The selection of the suitable gloves does not only depend on material but also on further quality characteristics 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 to be checked prior to the application. Suitable glove material is e. g. butyl rubber, fluorocarbon rubber (Viton), natural rubber (Latex). For the permanent contact of a maximum of 15 minutes gloves made of PVC or PE are suitable.										
<b>Penetration time of glove material:</b> The exact breakthrough time is to be obtained from the manufacturer of the protective gloves and has to be observed.										
<b>Eye protection:</b> Wear protective goggles with side protection.										
<b>Body protection:</b> Lightweight protective clothes.										
<b>General protective and hygienic measures:</b>										
The usual precautionary measures for contact with chemicals are to observe.										

# Material Safety Data Sheet

according to 1907/2006/EC, Article 31  
Hoffmann Dental Manufaktur GmbH

## 9. Physical and chemical properties

<b>General information:</b>	
<b>Form:</b>	liquid
<b>Colour:</b>	clear, yellow
<b>Odour:</b>	alcoholic
<b>Change in state</b>	
<b>Boiling point/boiling range:</b>	78 °C (pure ethanol)
<b>Danger of explosion:</b>	3.5 – 15 Vol %
<b>Vapor pressure:</b>	approximately 57 hPa
<b>Flashpoint:</b>	14° C (pure ethanol)
<b>pH-value (10 g/l H<sub>2</sub>O):</b>	4.5 – 5.5
<b>Autoflammability:</b>	The product does not self ignite
<b>Danger of explosion:</b>	The product is not explosive
<b>Density (at 20 °C):</b>	0.85 g/cm <sup>3</sup>
<b>Solubility in water:</b>	slight
<b>Solvent content:</b>	
<b>Organic solvents:</b>	75 %
<b>Water:</b>	0.0 %
<b>VOC EU:</b>	75 %
<b>Solid content:</b>	25 %

## 10. Stability and reactivity

<b>Conditions to be avoided:</b>	Heating. No decomposition when used according to regulations. Explosible with air in gaseous/vaporous state.
<b>Hazardous reactions:</b>	Avoid strong oxidizing agents. as e.g. hydrogen peroxide, acids or alkali metals. Unsuitable materials: various plastics, rubber.
<b>Hazardous decomposition products:</b>	No hazardous decomposition products are known.

## 11. Toxicological information

**Values given below refer to the basic substance Ethanol.**

**Acute toxicity:** In our experience the product does not cause any noxious effects when used and handled according to regulations.

LC 50 (relating to inhalation, rat)	> 20.000 mg/l/10 h
LD50 (dermal, rabbit):	> 20.000 mg/kg
LC50 (oral, rat)	7.060 mg/ kg

**Specific symptoms in animal experiments:**

Test for irritation to eye (rabbit):	Slight irritation
Test for irritation to skin (rabbit):	Slight irritation

**Subacute to chronic toxicity:**

**Test for sensitisation (Magnusson Kligman):** No sensitising effect

Mutagenicity Test: Ames-Test: Negative; no mutagenic effect.

**Further toxicological information:**

- **Inhaling:** Vapours in high concentration cause irritation to respiratory tract; danger of resorption.
- **Skin:** After long-term effect of the chemical: Dermatitis (ethanol)
- **Eye:** Slight irritation.
- **Swallowing:** Nausea and vomiting.
- **Systemic effect:** Euphoria
- **After resorption of a large amount of substance:** Dizziness, intoxication, anaesthesia, respiratory paralysis.

## 12. Ecological information

**Referring to main substance:**

<b>Biological decomposition:</b>	Not determined.
<b>Ecotoxicological information:</b>	Quantitative data about ecological effects are not available for this product.
<b>Biological effects:</b>	Not determined.
<b>General information:</b>	Slight hazardous to waters. Prevent any spillage of larger amounts from entering groundwater, waters or sewage system.

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Hoffmann Dental Manufaktur GmbH

## 13. Disposal details



**Product:** Do not dispose of together with domestic waste.  
Prevent releasing into sewage system.  
**Uncleaned packaging:** Dispose of in accordance with official regulations.

### European Waste Catalogue

18 01 06 Chemicals containing or consisting of hazardous substances

## 14. Transport information

### Land transport ADR/RID and GGVS/GGVE (cross-border/national):



**ADR/RID-GGVS/E class:** 3 (F1) flammable liquid  
**Kemler-Number :** 33  
**UN-Number:** 1866  
**Packaging group:** II  
**Hazard label:** 3  
**Proper shipping name:** 1866, RESIN SOLUTION, FLAMMABLE

### Maritime transport IMDG/GGV sea:



**IMDG/GGVsea class:** 3  
**UN-Number:** 1866  
**Label:** 3  
**Packaging group:** II  
**EMS-Number:** F-E, S-D  
**MARINE POLLUTANT:** NO  
**Proper shipping name:** RESIN SOLUTION, FLAMMABLE (14 °C c.c.)

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



**ICAO / IATA class:** 3  
**UN/ID number:** 1866  
**Label:** 3  
**Packing group:** II  
**Proper shipping name:** RESIN SOLUTION, FLAMMABLE

# Material Safety Data Sheet

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## 15. Regulations according to GHS

**Signal word:** Danger

**Hazard pictogram:**



**Hazard Statements:** H225: Highly flammable liquid and vapour.

**Precautionary Statements:** P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P233: Keep container tightly closed

## 16. Regulations

**Labelling according to EU-Directive:**

The product has been classified and labelled in accordance with EU-Directives / Ordinance on Hazardous Materials (GefStoffV).

**Labels:**



F Highly flammable

**Risk phrases:** 11 Highly flammable.

**Safety phrases:** 7-16 Keep container tightly closed and away from ignition sources. Do not smoke.

**National regulations:**

**Water hazard class:** 1 (slight hazardous to waters), self-assessment.

## 17. Other information

This information is based on our present knowledge. However, they do not represent a guarantee for any product features and do not establish a contractual relationship.

**Department issuing MSDS:** Quality assurance department