



**Hinrivest Liquid High Ex**

**1. Identification of the substance / Preparation and Company:**

- 1.1. Product identifier  
 Identification of the substance or preparation:  
 Commercial product name: Hinrivest Liquid High Ex  
 Chemical characterization: Amorphous Silica, aqueous colloidal solution.
- 1.2. Relevant identified uses of the substance or mixture and uses advised against  
 Use of the Substance/Mixture  
 Specific use(s): Inorganic binder, surface modifier and flocculating agent.
- 1.3. Details of the supplier of the safety data sheet  
 Manufacturer/Supplier: ERNST HINRICHS Dental GmbH  
 Street / mailbox: Borsigstr. 1  
 Country code. / postal code / city: D - 38644 Goslar  
 Phone: 0 53 21 / 5 06 24  
 Fax: 0 53 21 / 5 08 81  
 E-mail / Website: info@hinrichs-dental.de / www.hinrichs-dental.de  
 Further information obtainable from: ERNST HINRICHS Dental GmbH
- 1.4. Emergency telephone number  
 ERNST HINRICHS Dental GmbH: +49 (0) 53 21 / 5 06 24 - 25 (Mon-Fri. 8 a.m. – 4 p.m.)

**2. Hazards Identification:**

- 2.1. Classification of the substance or mixture  
 Classification (REGULATION (EC) No 1272/2008): Not a hazardous substance or mixture.
- 2.2. Label elements  
 Labelling (REGULATION (EC) No 1272/2008): Not a hazardous substance or mixture.
- 2.3. Other hazards:  
 PBT and vPvB assessment : No further data available.  
 This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**3. Composition / Information on Ingredients:**

3.1 Mixtures:

Hazardous substance

Chemical name	PBT vPvB OEL	CAS-No. EC-No. REACH No.	Classification (REGULATION (EC) No 1272/2008)	Concentration [%]
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Remarks : No ingredients according to the criteria in Regulation (EC) No. 1907/2006 (Annex II).

Silicon dioxide, amorphous	OEL	7631-86-9 231-545-4 01-2119379499-16		30 - 60
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OEL : Occupational exposure limit.  
 REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).  
 Status: Not applicable

**4. First aid measures:**

- 4.1 Description of first aid measures  
 General advice: No hazards which require special first aid measures.  
 After inhalation: If breathed in, move person into fresh air. If symptoms persist, call a physician.  
 After skin contact: Remove contaminated clothing. Rinse with water.



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After eye contact: Rinse with plenty of water. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing.  
 After swallowing: Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person.

- 4.2 Most important symptoms and effects, both acute and delayed:  
 Symptoms: No information available.  
 Risks: No information available.
- 4.3 Indication of any immediate medical attention and special treatment needed:  
 Treatment: Treat symptomatically.

**5. Fire Fighting measures:**

- 5.1 Suitable extinguishing agents: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- 5.2 Special hazards arising from the substance or mixture: No hazards to be specially mentioned.  
 Combustion products: No hazardous combustion products are known.
- 5.3 Advice for firefighters  
 Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus.  
 Further information: Standard procedure for chemical fires.

**6. Accidental release measures:**

- 6.1 Personal precautions, protective equipment and emergency procedures  
 Personal precautions: No conditions to be specially mentioned.
- 6.2 Environmental precautions: No special environmental precautions required.
- 6.3 Methods and materials for containment and cleaning up: Wipe up with absorbent material (e.g. cloth, fleece).  
 Keep in suitable, closed containers for disposal.  
 If liquid has been spilt in large quantities clean up promptly by scoop or vacuum.
- 6.4 Reference to other sections  
 Additional advice: For personal protection see section 8.

**7. Handling and Storage:**

- 7.1 Precautions for safe handling  
 Advice on safe handling: For personal protection, see section 8.  
 No special handling advice required.  
 Information about fire- and explosion protection: Normal measures for preventive fire protection.
- 7.2 Conditions for safe storage, including any incompatibilities  
 Requirements for storage areas and containers: Keep container tightly closed in a dry and well-ventilated place.  
 Store in closed dark containers made of anti-corrosive material.  
 Advice on common storage: No special restrictions on storage with other products.  
 Minimum storage temperature: Avoid temperatures below: 5 °C  
 Maximum storage temperature: 50 °C  
 Other data: No decomposition if stored and applied as directed.
- 7.3 Specific end use(s): No information available.

**8. Exposure controls / Personal protection:**

- 8.1 Control parameters  
 Components with workplace control parameters:

Components	CAS-No.	Value	Control parameters	Update	Basis	Form of exposure



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Silicon dioxide, amorphous	7631-86-9	AGW	6 mg/m <sup>3</sup>	2011-12-01	GB EH40	Inhalable dust
Further Information:		<p>15: For the purposes of these limits, respirable dust and inhalable dust are those fractions of airborne dust which will be collected when sampling is undertaken in accordance with the methods described in MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust</p> <p>44: The COSHH definition of a substance hazardous to health includes dust of any kind when present at a concentration in air equal to or greater than 10 mg.m<sup>-3</sup> 8-hour TWA of inhalable dust or 4 mg.m<sup>-3</sup> 8-hour TWA of respirable dust. This means that any dust will be subject to COSHH if people are exposed above these levels. Some dusts have been assigned specific WELs and exposure to these must comply with the appropriate limit.</p> <p>45: Most industrial dusts contain particles of a wide range of sizes. The behaviour, deposition and fate of any particular particle after entry into the human respiratory system and the body response that it elicits, depend on the nature and size of the particle. HSE distinguishes two size fractions for limit-setting purposes termed 'inhalable' and 'respirable'.</p> <p>46: Inhalable dust approximates to the fraction of airborne material that enters the nose and mouth during breathing and is therefore available for deposition in the respiratory tract. Respirable dust approximates to the fraction that penetrates to the gas exchange region of the lung. Fuller definitions and explanatory material are given in MDHS14/3.</p> <p>47: Where dusts contain components that have their own assigned WEL, all the relevant limits should be complied with.</p> <p>2: Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used</p> <p>Silica</p>				
		WA	2.4 mg/m <sup>3</sup>	2011-12-01	GB EH40	Respirable dust
Further information:		<p>15: For the purposes of these limits, respirable dust and inhalable dust are those fractions of airborne dust which will be collected when sampling is undertaken in accordance with the methods described in MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust</p> <p>44: The COSHH definition of a substance hazardous to health includes dust of any kind when present at a concentration in air equal to or greater than 10 mg.m<sup>-3</sup> 8-hour TWA of inhalable dust or 4 mg.m<sup>-3</sup> 8-hour TWA of respirable dust. This means that any dust will be subject to COSHH if people are exposed above these levels. Some dusts have been assigned specific WELs and exposure to these must comply with the appropriate limit.</p> <p>45: Most industrial dusts contain particles of a wide range of sizes. The behaviour, deposition and fate of any particular particle after entry into the human respiratory system and the body response that it elicits, depend on the nature and size of the particle. HSE distinguishes two size fractions for limit-setting purposes termed 'inhalable' and 'respirable'.</p> <p>46: Inhalable dust approximates to the fraction of airborne material that enters the nose and mouth during breathing and is therefore available for deposition in the respiratory tract. Respirable dust approximates to the fraction that penetrates to the gas exchange region of the lung. Fuller definitions and explanatory material are given in MDHS14/3.</p> <p>47: Where dusts contain components that have their own assigned WEL, all the relevant limits should be complied with.</p> <p>2: Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used</p> <p>Silica</p>				



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Silicon dioxide, amorphous	7631-86-9	TWA	20 Million particles per cubic foot	2012-07-01	OSHA Z-3	
Further information:		a: Based on impinger samples counted by light-field techniques. mppcf X 35.3 = million particles per cubic meter = particles per c.c Silica				
		TWA	80mg/m3 / %SiO2	2012-07-01	OSHA Z-3	
Further information:		Silica				
		TWA	6 mg/m3	2013-10-08	NIOSH REL	
Further information:		Silica				
		PEL	6 mg/m3	2014-11-26	CAL PEL	

- ACGIH: American Conference of Governmental Industrial Hygienists
- AGW: Arbeitsplatzgrenzwert
- BEI: Biological Exposure Index
- MAC: Maximum Allowable Concentration
- NIOSH: National Institute for Occupational Safety and Health
- OEL: Occupational exposure limit.
- STEL: Short term exposure limit
- TRGS: Technische Regel für Gefahrstoffe
- TWA: Time Weighted Average

- 8.2 Exposure controls:
- Engineering Controls: Effective exhaust ventilation system.
  - Personal protective equipment:
  - Respiratory protection: No personal respiratory protective equipment normally required.
  - Protection of hands: PVC Rubber gloves.
  - Eye protection: Safety glasses.
  - Hygiene measures: General industrial hygiene practice.
  - Environmental exposure controls:
  - General advice: No special environmental precautions required.

**9. Physical and chemical properties:**

9.1 Information on basic physical and chemical properties

- Appearance
- Form: liquid
  - Colour: white
  - Odour: odourless
  - Odour threshold: No data available.
  - pH-value: 9 - 10
  - Melting point / Melting range: 0°C
  - Boiling point / Boiling range: 100°C
  - Flash point: Not applicable.
  - Evaporation rate: No data available.
  - Flammability (solid, gas): Not applicable.
  - Flammability (liquids): The product is not flammable.
  - Lower explosion limit : Not applicable.
  - Upper explosion limit : Not applicable.
  - Vapour pressure: Approx. 23 hPa at 20°C
  - Relative vapour density: No data available.
  - Relative density: 1.000 - 1.350
  - Water solubility: dispersible
  - Solubility in other solvents: No data available.
  - Partition coefficient: n octanol/water: Not applicable.
  - Auto-ignition temperature: Not applicable.
  - Decomposition temperature: No data available.



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Viscosity, dynamic: Viscosity, kinematic: Explosive properties: Oxidizing properties: 9.2 Other information	< 20 mPa.s No data available. Not explosive. Not classified as oxidising. This safety datasheet only contains information relating to safety and does not replace any product information or product specification.
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**10. Stability and Reactivity:**

10.1 Reactivity: 10.2 Chemical stability: 10.3 Possibility of hazardous reactions: 10.4 Conditions to avoid:  10.5 Incompatible materials:  10.6 Hazardous decomposition products: Thermal decomposition:	Stable under normal conditions. Stable under recommended storage conditions. No dangerous reaction known under conditions of normal use. Avoid drying out of the solution as this can lead to a build up of dust. Materials to avoid : Copper, Mild steel, Aluminium No hazardous decomposition products are known. No data available.
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**11. Toxicological Information:**

11.1 Information on toxicological effects Product information Acute oral toxicity: Skin corrosion/irritation: Serious eye damage/eye irritation: Respiratory or skin sensitisation:  Germ cell mutagenicity: Carcinogenicity: Reproductive toxicity: STOT - single exposure: STOT - repeated exposure: Aspiration hazard: Further information:  Test result Acute oral toxicity:  Respiratory or skin sensitisation:  Germ cell mutagenicity Genotoxicity in vitro:  Silicon dioxide, amorphous Acute toxicity: Acute oral toxicity:	Not classified based on available information. Not classified based on available information. Not classified based on available information. Respiratory sensitisation: Not classified based on available information. Skin sensitisation: Not classified based on available information. Not classified based on available information. Not classified based on available information. Not classified based on available information. Not classified based on available information. Not classified based on available information. Information given is based on data on the components and the toxicology of similar products.  LD50: > 5,000 mg/kg Species: Rat The value is estimated from tests on similar products. Result: Did not cause sensitisation on laboratory animals. Method: (Magnusson-Kligman): The value is estimated from tests on similar products.  Ames test Result: negative Method: OECD Test Guideline 471 The value is estimated from tests on similar products.  LD50: > 10,000 mg/kg Species: Rat
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**12. Ecological Information:**

Product information:  
 Ecotoxicology Assessment:



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Additional ecological information:	None known.
12.1 Toxicity	
Test result:	
Toxicity to fish:	LC50: > 5 000 mg/l Exposure time: 96 h Species: Danio rerio (zebra fish) The value is estimated from tests on similar products.
Toxicity to daphnia and other aquatic invertebrates:	EC50: 7 600 mg/l Exposure time: 48 h Species: Ceriodaphnia Dubia (water flea) The value is estimated from tests on similar products.
Toxicity to algae:	NOEC: 60 mg/l Exposure time: 48 h Species: Selenastrum capricornutum (green algae) The value is estimated from tests on similar products.
	EC50: 120 mg/l Exposure time: 48 h Species: Selenastrum capricornutum (green algae) The value is estimated from tests on similar products.
	EC10: 140 mg/l Exposure time: 48 h Species: Selenastrum capricornutum (green algae) The value is estimated from tests on similar products.
12.2 Persistence and degradability	
Product information:	
Biodegradability:	Result: Not applicable inorganic
Components:	No information available.
12.3 Bioaccumulative potential	
Product information:	
Bioaccumulation:	No bioaccumulation is expected.
Components:	No information available.
12.4 Mobility in soil	
Product information:	
Mobility:	No test results. Under extreme circumstances, transport from earth to water may take place. Transport to air is not expected.
Distribution among environmental compartments:	
Components:	No information available.
12.5 Results of PBT and vPvB assessment	
Product information:	
PBT and vPvB assessment :	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Components:	No information available.
12.6 Other adverse effects	
Product information:	
Biochemical Oxygen Demand (BOD):	No data available.
Components:	No information available.
<b>13. Disposal Considerations:</b>	
13.1 Waste treatment methods -	Empty remaining contents.



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Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.

**14. Transport Information:**

- |  |  |
|--|--|
| 14.1 UN-Number:  | Not regulated as a dangerous good.                                   |
| 14.2 UN proper shipping name:  | Not regulated as a dangerous good.                                   |
| 14.3 Transport hazardous class:  | Not regulated as a dangerous good.                                   |
| 14.4 Packing group:  | Not regulated as a dangerous good.                                   |
| 14.5 Environmental hazards:  | Not regulated as a dangerous good.                                   |
| 14.6 Special precautions for user:   | Not classified as dangerous in the meaning of transport regulations. |
| 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: | Not applicable for product as supplied.                              |

**15. Regulatory Information:**

- 15.1 Safety, health and environmental regulations / legislation specific for the substance or mixture:
- |                                      |  |
|--------------------------------------|--|
| Major Accident Hazard Legislation:   | Seveso Directive<br>SEVESO II<br>Not applicable  |
|                                      | Seveso Directive<br>2012/18/EU<br>Not applicable   |
| Water contaminating class (Germany): | nwg not water endangering.   |
| Notification status:                 |  |
| TSCA:                                | YES. All chemical substances in this product are either listed on the TSCA Inventory or in compliance with a TSCA Inventory exemption. |
| DSL:                                 | YES. All components of this product are on the Canadian DSL  |
| AICS:                                | YES. On the inventory, or in compliance with the inventory   |
| NZIoC:                               | YES. On the inventory, or in compliance with the inventory   |
| ENCS:                                | YES. On the inventory, or in compliance with the inventory   |
| ISHL:                                | YES. On the inventory, or in compliance with the inventory   |
| KECI:                                | YES. On the inventory, or in compliance with the inventory   |
| PICCS:                               | YES. On the inventory, or in compliance with the inventory   |
| IECSC:                               | YES. On the inventory, or in compliance with the inventory   |
- For explanation of abbreviation see section 16.
- Further information: This product is to be considered as a preparation according to EU-legislation.
- 15.2 Chemical Safety Assessment:  
 Silicon dioxide, amorphous : A Chemical Safety Assessment is not required for this substance.

**16. Further Information:**

Full text of other abbreviations  
 ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG



According to Regulation (EC) No. 1907/2006  
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- International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information:

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.