**MATERIAL SAFETY DATA SHEET**
According to (EG) 1907/2006 (REACH)
**ERNST HINRICHS GmbH**

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# Hinripress Vario liquid

## 1. Identification of the Substance / Preparation and Company:

Identification of the substance or preparation:

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| Commercial product name: | **HinriPress Vario liquid** |
| Use / Purpose | Denture Base Resin, self-curing acrylic, liquid component of the 2-component acrylic system based on methyl methacrylate (powder and liquid), for the purpose of crafting individual dentures. |
| Company / Manufacturer: | ERNST HINRICHS GmbH<br>Borsigstr. 1<br>D - 38644 Goslar<br>0 53 21 / 5 06 24<br>0 53 21 / 5 08 81<br>info@hinrichs-dental.de / www.hinrichs-dental.de |

## 2. Hazards Identification:

Hazard symbols



Highly flammable Irritating

special guidelines concerning dangers to humans ad the environment: Highly flammable. Irritating to respiratory system and skin. May cause sensitization by skin contact.

## 3. Composition / Information on Ingredients:

Chemical characterization: Mixture on the basis of methyl methacrylate.

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| **Hazardous ingredients:** | **Methyl methacrylate** |
| Concentration: | 60 to 100 % |
| Chemical formula: | $C_5 H_8 O_2$ |
| CAS Number | 80-62-6 |
| EINECS Number | 201-297-1 |
| Index Number | 607-035-00-6 |
| Hazard symbols: | F, Xi |
| R-phrases | 11-37/38-43 |

## 4. First aid measures:

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| 4.1 | General Information | Remove soiled, soaked clothing immediately. Medical treatment is necessary if symptoms occur that are obviously caused by skin or eye contact with the product or by inhalation of its vapours. |
| 4.2 | After inhalation: | In case of inhalation remove casualty to fresh air and allow to rest. Seek medical advice. |
| 4.3 | After contact with the skin: | In case of contact with skin wash off immediately with soap and water. If skin irritation occurs, seek medical advice. |
| 4.4 | After contact with the eyes: | In case of contact with the eyes rinse thoroughly with plenty of water while keeping the eyelids open. If irritation persists seek medical advice. |
| 4.5 | After swallowing: | Do not induce vomiting. Seek medical advice immediately. |

## 5. Fire Fighting measures:

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| 5.1 | Suitable extinguishing media: | Foam, dry powder, carbon dioxide |
| 5.2 | Unsuitable extinguishing media for safety reasons: | water |

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| 5.3 | Special protective equipment for fire fighting: | Wear self-contained breathing apparatus. |

## 6. Accidental release measures:

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| 6.1 | Personal precautionary measures: | Assure appropriate air-flow. Wear protective clothing. Keep away from ignition sources. Use breathing apparatus if exposed to vapours/dust/mist/aerosol. |
| 6.2 | Environmental protection measures: | Do not discharge into drains / surface water / groundwater. |
| 6.3 | Measures for cleaning: | |
| | Large quantities: | Remove mechanically (hydraulic pump). Assure explosion-safe measures. |
| | Smaller quantities: | Pick up with liquid absorbing material (sand, diatomaceous earth, acid absorbent, sawdust or tissues). Dispose of in accordance with regulations. |

## 7. Handling and Storage:

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| 7.1 | Instructions on safe handling: | Keep container well closed. Assure appropriate air-flow. |
| 7.2 | Information on fire and explosion protection: | Keep away from ignition sources – No smoking. Take precautionary measures against static discharges. In the event of fire, cool the endangered containers with water. When heated above the flash point and/or during spraying (atomizing), ignitable mixtures may form in the air. Use explosion-proof equipment only. |
| 7.3 | Storage: | |
| | Requirements for storage areas and containers: | Keep only the original container at a temperature not exceeding 25°C. Protect from light. Fill the container by approx. 90 % only as oxygen (air) is required for stabilization. With large storage containers make sure the oxygen (air) supply is sufficient to ensure stability. |
| 7.4 | Additional Information: | If the liquid should cool down to a temperature of lower than 10°C some of the ingredients may crystallize and sink to the bottom. If the materials temperature rises up to room temperature again these crystals dissolve again. The properties of the material will not be affected by this phenomena. |

## 8. Exposure controls / Personal protection:

Components or products of decomposition according to point 10, with limit values related to the place of work which requires monitoring.

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| **Methyl methacrylate** | **80-62-6** |
| OES (long-term) 2003 | 208 mg/m$^3$ – 50 ppm |
| OES (short term) 2003 | 416 mg/m$^3$ – 100 ppm |
| Personal protective equipment: | |
| General protective measures: | Do not inhale vapours. Avoid contact with eyes and skin. |
| Respiratory protection: | Breathing apparatus in case of high concentrations, short term: filter appliance, filter A. |
| Hand protection: | Wear protective gloves made of butyl rubber (0,7 mm), break through time 300 min (EN 374). In practice, due to variable exposure conditions, this information can only be an aid to orientation for the selection of a suitable chemical protection glove. In particular, this information does not substitute suitability tests by the user. |
| Eye protection: | Tightly fitting goggles. |
| Body protection: | When handling larger quantities wear face shield, apron and chemical resistant boots. |

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| Hygiene measures: | Store work clothing separately. Remove soiled or soaked clothing immediately. Follow the usual good standards of occupational hygiene. Clean skin clearly after work; apply skin cream. |
| General information: | Gloves should be changed regularly, especially after over excessive contact with the product. A different type of glove should be considered for each workspace. |

## 9. Physical and chemical properties:

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| 9.1 | Appearance: | |
| | Form: | Liquid |
| | Colour: | Colourless |
| | Odour: | Ester-like |
| 9.2 | Changes in physical state: | |
| | Melting point: | -48,2 °C |
| | Boiling point: | 100,3 °C (at 1.013 hPa) |
| | Flashpoint: | 10 °C (DIN 51755) |
| | Ignition temperature: | 430 °C (DIN 51794) |
| | lower explosion limit: | 2,1 % (V) |
| | Upper explosion limit: | 12,5 % (V) |
| | Vapour pressure: | 38,7 hPa (at 20 °C) |
| | Density | 0,94 g/cm$^3$ (at 20 °C) |
| | Bulk density: | > 1 (at 20 °C) |
| | Solubility in water: | 15,9 g/l (at 20 °C) |
| | Qualitative: | miscible with most organic solvents |
| | pH-value: | not applicable |
| | n-Octanol/water partition coefficient: | log pow 1,38 (measured) |
| | Dynamic viscosity: | 0,63 mPa.s (at 20 °C, Brookfield) |
| | Further information: | none |

## 10. Stability and Reactivity:

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| Thermal decomposition: | No decomposition when used as directed. |
| Hazardous reactions: | Polymerisation with heat evolution may occur in the presence of radical forming substances (e.g. peroxides), reducing substances, and/or heavy metal ions. |
| Hazardous decomposition products: | None when used as directed. |

## 11. Toxicological Information:

**The following information is related to the component methyl methacrylate**

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| Acute oral toxicity: | > 5.000 mg/kg; practically non-toxic if swallowed; LD50 rat, OECD 401 |
| Acute inhalational toxicity: | 29,8mg/l; low toxicity by inhalation; LC50 rat, exposure 4h |
| Acute dermal toxicity: | > 5.000 mg/kg; practically non-toxic in contact with skin; LD50 rabbit |
| Irritant effect on skin: | not irritating; rabbit exposure 24h; FDA 1959 Draize, occlusive |
| Irritant effect on eyes: | not irritating; rabbit; Draize |
| Sensitization: | In sensitization tests on guinea pigs with and without adjuvant, both positive and negative results were found. In humans various types of allergic reactions have been observed (symptoms: headache, eye irritations, skin affections). |

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| Toxicity on repeated administration: | NOAEL 25ppm; at said doses no adverse effects were observed. At higher doses adverse effects were observed; rat; inhalative 2 a, 25-400ppm (Findings: damage to mucous membranes in the nose at 400ppm).<br>NOAEL 2000ppm; rat; drinking water 2 a, 6-20ppm (Findings: no toxic effects) |
| Mutagenicity: | Positive as well as negative results within in vitro mutagenicity / genotoxicity testes. No experimental indication of genotoxicity in vivo available. In summary **not mutagenic** according to internationally accepted criteria. |
| Carcinogenicity: | Non-carcinogenic in inhalation and feeding studies carried out on rats, mice, dogs. |
| Reprotoxycity / teratogenicity: | No indications of toxic effects were observed in reproduction studies in animals. |
| Additional information: | Avoid contact with skin and eyes and inhalation of the product vapours. |

## 12. Ecological Information: Information on elimination (persistence degradability)

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| Biodegradability: | readily degradable, ca. 94 %<br>Method: OECD 301 C, 14 d |
| **Ecotoxicological effect** | |
| Fishtoxicity (LC50) | > 79 mg/l<br>Oncorhynchus mykiss, rainbow trout, OECD 203 GLP, 96 h |
| Daphnia toxicity (EC50) | 69 mg/l<br>Daphnia magma, OECD 202, 48h |
| NOEC | 37 mg/l<br>Daphnia magma, OECD 202, 21 d |
| Algae toxicity (EC3) | 37 mg/l<br>Scenedesmus quadricauda, DIN 38412 section 9, 8 d |
| Algae toxicity (EC50) | 170 mg/l<br>Selenastrum capricornutum, OECD 201, 96h |
| Bakteria toxicity (EC0) | 100 mg/l<br>Pseudomonas putida |
| Additional ecological Information: | Do not allow to enter soil, waterways or waste water. |

## 13. Disposal Considerations:

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| 13.1 | Product | Waste in hazardous and therefore particularly to be kept under surveillance. It must be disposed of in accordance with the regulation after consultation of the competent local authorities and the disposal company in a suitable and licensed facility. |
| 13.2 | Uncleaned packaging | Contaminated packaging should be emptied optimally and after appropriate professional cleansing may be taken for reuse. Packaging that cannot be cleaned should be disposed of professionally. Uncontaminated packaging may be taken for recycling. |
| 13.3 | Code of waste EWC | **07 02 08**<br>Waste from the manufacture, formulation, supply and use (MFSU) of plastics, synthetic rubber and man-made fibres – or still bottoms and reaction residues.<br>Always check the given waste codes according to the actual conditions of manufacturing, formulation or use in your facilities. |

## 14. Transport information:

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| Overland Transport<br>ADR/RID/GGVSE |  |
| Class: | 3 flammable liquids |
| Dangerous cargo number: | 339 |
| UN Number: | 1247 |
| Packaging group: | II |
| Label: | 3 |
| Declaration of the good: | UN 1247 METHYL METHACRYLATE, MONOMER, STABILIZED, 3, II |
| Inland waterway transport<br>ADNR |  |
| Class: | 3 flammable liquids |
| UN Number: | 1247 |
| Packaging group: | II |
| Label: | 3 |
| Declaration of the good: | UN 1247 METHYL METHACRYLATE, MONOMER, STABILIZED, 3, II |
| Shipment by sea<br>IMDG/GGVSee |  |
| Class: | 3 flammable liquids |
| UN Number: | 1247 |
| EmS: | F-E, S-D |
| Marine pollutant: | - |
| Packing group: | II |
| Proper Shipping Name: | METHYL METHACRYLATE, MONOMER, STABILIZED |
| Airtransport<br>ICA/IATA |  |
| Class: | 3 flammable liquids |
| UN Number: | 1247 |
| Packing group: | II |
| Proper Shipping Name: | METHYL METHACRYLATE, MONOMER, STABILIZED |
| DOT | UN 1247 METHYL METHACRYLATE, MONOMER, STABILIZED |

## 15. Regulations:

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| Labelling in accordance to EC directive GefStoffV: | requires labelling |
| Hazardous component for labelling: | contains methyl methacrylate |
| Hazardous symbols: | F Highly flammable<br>Xi Irritant |
| Risk phrases (R-phrases) | 11 Highly flammable<br>37/38 Irritating to respiratory system and skin<br>43 May cause sensitization by skin contact |
| Safety Phrases (S-phrases) | 24 Avoid contact with skin<br>37 Wear suitable gloves<br>46 If swallowed, seek medical advice immediately and show container or label |

| **15.** | **Regulations - continued** | |
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| | Occupational restrictions | - Note for juveniles<br>- Note for pregnant women and nursing mothers (EC Directive 92/85/EEC) |
| 16. | Further information | This product is normally supplied in a stabilized form. If the permissible storage period and/or storage temperature is exceeded, the product may polymerize with heat evolution. |
| | References | Relevant manuals and publications,<br>Toxicological and ecotoxicological studies of other manufactures,<br>SIAR,<br>OECD-SIDS,<br>RTK public files |

The above information describes exclusively the safety requirements of the product(s) and is based on our present-day knowledge. It does not represent a guarantee for the properties of the product(s) described in terms of the legal warranty regulations. Properties of the product are to be found in the respective product leaflet.