

Safety Data Sheet

1. Product and Company Identification

Product name:

Photo-Cured Resin, SR100-BS
Photo-Cured Resin, SR100-TR

Manufacture:

Vertex-DentalB.V.

Address:

P.O. Box 103700 AA Zeist The Netherlands

Emergency telephone number:

+31 88 6160 487 (only available during office hours)

Suppliere's name:

Roland DG Corporation

Address:

1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi,
Shizuoka-ken, 431-2103
JAPAN

Phone:

+ 81-53-484-1224

Fax:

+ 81-53-484-1226

Importer/Supplier:

Roland DGA Corporation

Address:

15363 Barranca Parkway Irvine, CA 92618-2201
U.S.A.

Phone:

949-727-2100

Fax:

949 727 2112

Use of the product:

Stereolithography Resin

Date of issue:

30 August, 2017

2. Hazard Identification

2.1 Emergency Overview:

Appearance and odor:

Opaque viscous liquid

This product is classified as dangerous according to GHS.

Skin sensitization - skin

Category 1

Aquatic Chronic

Category 4

GHS label elements, including precautionary statements

Pictogram



Signal word(s)

Warning

Hazard statement(s)

May cause an allergic skin reaction.
May cause long lasting harmful effects to the aquatic life.

| | |
|----------------------------|--|
| Precautionary statement(s) | |
| Prevention | Wear protective gloves Avoid breathing dust/fumes/gas/mist/vapours/spray Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment |
| Response | IF ON SKIN (or hair): wash with plenty of soap and water IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing. If skin irritation or a rash occurs: Get medical advice/attention. Take of contaminated clothing and wash before reuse. |
| Disposal | Dispose of contents/container to hazardous or special waste collection point. |

2.2. OSHA regulatory status

This product is considered hazardous material by the OSHA Communication Standard (29 CFR 1910.1200)

2.3. Other hazards

Potential Health Effects:

| | |
|-------------------------|--|
| Eyes: | Causes severe eye injury which may persist for several days. |
| Skin: | Contact with skin may cause irritation, swelling or redness, allergy and/or sensitization. |
| Inhalation: | Exposure to vapors (mist) may be harmful to the unborn child and at the risk of impaired fertility and irritate nose, throat/respiratory system. |
| Ingestion: | May cause injury of mouth ,throat, and stomach. |
| Chronic Health Hazards: | Repeated skin contact may cause a persistent irritation or dermatitis. |
| Carcinogenicity: | None of the ingredients in this resin is listed by IARC as a carcinogen. (1,2A and 2B) |

2.4. Potential environmental effects

See section 12 for Ecological information.

3. Composition/Information on Ingredients

| Composition | CAS No. | % By Weight | Classification HCS |
|--|-------------|-------------|---|
| Ethoxylated Bisphenol A | 41637-38-1 | >60 | Aquatic Chronic 4: H413 |
| Methacrylic oligomer | C.B.I. | 15 - 25 | Skin Sens. 1: H317 |
| Phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide | 162881-26-7 | <2.5 | Skin Sens. 1: H317 Aquatic Chronic 4: H413 |
| Phenylphosphinate | 84434-11-7 | <2.5 | Aquatic Chronic 3: H412 |

*C.B.I.: Confidential Business Information

Additional information: Chemical name and exact concentrations are being withheld as trade secrets.

4. First Aid Measures

4.1. First aid procedures

- Eyes:** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids open during flushing. Call a physician.
- Skin:** In case of contact, immediately flush with plenty of water while removing contaminated clothing and shoes. Wash contaminated clothing before reuse. If swelling or redness occurs, call a physician.
- Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
- Ingestion:** If swallowed, DO NOT induce vomiting. Seek immediate medical advice.

4.2. Note to physicians

May cause skin and eye irritation.

5. Fire Fighting Measures

5.1. Flammable properties:

Hazardous decomposition products: Carbon monoxide, carbon dioxide, oxides of nitrogen, toxic gases/vapors.

Flash Point: >93deg.C

5.2. Extinguishing media

Suitable extinguishing media:

Carbon dioxide, dry chemical, foam.

Unsuitable extinguishing media:

Water must not be used to extinguish.

5.3. Protection of fire fighters

Special hazards arising from the substance or mixture

Toxic and irritating fume and/or gases may generate by combustion.

Protective equipment and precautions for firefighters

Wear special chemical protective clothing and positive pressure self-contained breathing apparatus. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Decontaminate or discard any clothing that may contain chemical residues.

Applying direct water may be dangerous because fire may expand to surroundings.

6. Accidental Release Measures

General:

Notify the appropriate authorities immediately. Take all additional action necessary to prevent and remedy the adverse effects of the spill. Absorb spill with sand or earth then place in a chemical waste container.

6.1. Personal precautions

Evacuate personnel, thoroughly ventilate area, use self-contained breathing apparatus and wear appropriate personal protective equipment.

6.2. Environmental precautions

Wipe off spillage. Prevent liquid from entering sewers, waterways or low areas.

6.3. Methods for containment

Dike spilled product.

6.4. Methods for Clean-up

Sweep up material and dispose as waste following local regulations. Scrub contaminated area with detergent and water.

6.5. Other information

No information

6.6. Spill or leak statements by type of chemical

Eliminate all ignition sources. Use appropriate personal protective equipment (PPE). Absorb and/or contain spill with inert sand, then place in suitable container. For large spills; use water spray to disperse vapors and dilute spill to a nonflammable mixture. Do not flush to sewer. Prevent run-off from entering drains, sewers or waterways.

7. Handling And Storage

7.1. Handling

Avoid contact with eyes, skin and clothing. Use proper ventilation and no fire in work place. Put protection wear that has electrical conductivity in case of work. Keep out of reach of children and do not drink.

7.2. Storage

Keep containers tightly closed. Do not store the product in high or freezing temperatures. Keep the product out of direct sunlight. Do not store the product with metals, amines, free radical initiators, oxidising agents.

8. Exposure Controls/Personal Protection

8.1. Exposure Guidelines

Occupational Exposure Limits:

DNEL(Derived No Effect Level)

| components | Long term exposure | Short term exposure |
|------------------------|--------------------|---------------------|
| Methacrylic oligomers | Not listed | - |
| Phosphine oxides | 1.0 (Skin) | |
| Colorants and pigments | Not listed | - |

*Refere to Toxicological Information of REACH registered substance.

(Assessment information of exposure via inhalation route for workers)

8.2 Exposure controls:

Control the airborne concentrations below the exposure limits. Use only with adequate ventilation.

8.3. Personal protective equipment (PPE)

Eye/face protection:

Employee must wear splash-proof or dust safety goggles and a faceshield to prevent contact with this product.

Skin protection:

Employee must wear appropriate protective impervious clothing and equipment to prevent repeated or prolonged skin contact with this substance.

Hand protection:

Employee must wear appropriate protective impervious gloves to prevent contact with this substance.

Recommended Chemical-Protective Gloves are polyvinyl alcohol (PVA) Gloves and Laminate gloves. Laminate gloves are made by cutting and then heat-sealing patterns of various hand sizes from laminated sheets of PVA sealed between layers of polyethylene.

Respiratory protection:

In case ventilation is insufficient, wear respiratory protection. Use a half facepiece respirator (with gollges) or full face-piece respirator (without googles) filtered with organic vapor cartridge.

General hygiene measures:

Wash hands after handling. In case contact with clothing, wash before reuse. Do not eat, drink or smoke in handling or storage area.

9. Physical and Chemical Properties

| | |
|---|-----------------------|
| Appearance: | Opaque viscous liquid |
| Odor: | Ester like |
| pH: | Not applicable |
| Boiling point (deg.C) | > 100deg.C |
| Flash point (deg.C) | > 93deg.C |
| Ignition temperature (deg.C) | 430°C |
| Flammability limits (vol-%) | No data available |
| Specific Gravity (g/cm ³ , 20deg.C) | 1.11-1.15 (water = 1) |
| Explosive properties: | No data available |
| Oxidizing properties: | No data available |
| Vapor pressure: | No data available |
| Solubility: | No data available |
| Solubility in water (g/l, 20deg.C) | Insoluble |
| Partition coefficient: n-octanol/water: | No data available |
| Viscosity: | No data available |

| | |
|---|-------------------|
| Melting Point : | No data available |
| Evaporation Rate | No data available |
| Vapor Density | No data available |
| Volatile organic compounds (VOC) content: | No data available |

10. Stability and Reactivity

- 10.1. Reactivity: High temperatures and UV light may cause rapid polymerization.
- 10.2. Possibility of hazardous reactions: Hazardous polymerization. May polymerize.
- 10.3. Chemical stability: Stable under normal temperature conditions. Stable if stored and handles as prescribed/indicated.
- 10.4. Conditions to avoid: Avoid heat, flames and other sources of ignition. Avoid contact with free radical initiators. Avoid contact with isocyanates and oxidizing agents. Avoid contact with vinyl polymerization initiators. Avoid exposure to high temperatures, direct sunlight or ultra violet (UV) radiation.
- 10.5. Incompatible materials: Avoid contact with radical forming initiators, peroxides, strong alkalies or reactive metals to prevent exothermic polymerization.
- 10.6. Hazardous decomposition products: With regard to possible decomposition products refer to Section 5. Oxides of carbon.

11. Toxicological Information

Acute toxicity:

| | |
|-------------------------|-------------|
| Ethoxylated Bisphenol A | |
| LD50 acute oral rat: | >2000 mg/kg |
| LD50 acute dermal rat: | >2000 mg/kg |

| | |
|------------------------|-------------|
| LD50 acute oral rat: | >2000 mg/kg |
| LD50 acute dermal rat: | >2000 mg/kg |

Inhalation:

Irritating to respiratory system. High atmospheric concentrations may lead to irritation of the respiratory tract, dizziness, headache and anaesthetic effects.

Skin contact:

May cause sensitisation by skin contact. Irritating to skin, Repeated and/or prolonged contact may cause dermatitis.

Eye contact:

High vapour concentration may cause irritation.

Ingestion:

Low oral toxicity, but ingestion may cause irritation of the gastrointestinal tract.

12. Ecological Information

| | |
|--------------------------------|-------------------|
| Ecotoxicity: | No data available |
| Persistence/Degradability: | No data available |
| Bioaccumulation/Accumulation: | No data available |
| Mobility in environment media: | No data available |
| Other adverse effects: | No data available |

13. Disposal Considerations

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial and Local regulations. Do not flush to surface water or sanitary sewer system.

14. Transport Information

14.1. UN Class/UN Number:

ADR/ADG/DOT, IMDG, or IATA : Not regulated

14.2. UN proper shipping name:

ADR/ADG/DOT, IMDG, or IATA : Not regulated

14.3. Transport hazard class(es):

ADR/ADG/DOT, IMDG, or IATA : Not regulated

14.4. Packing group:

ADR/ADG/DOT, IMDG, or IATA : Not regulated

14.5. Environmental hazards:

ADR/ADG/DOT, IMDG, or IATA : Not regulated

14.6. Special precautions for user:

Transport and storage of the product in accordance with general precautions and instructions mentioned in this SDS.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and IBC code:

Not regulated

15. Regulatory Information

US information:

Toxic Substances Control Act (TSCA):

All components of this product are listed on the TSCA Inventory.

SARA Title III: Not regulated

California; Proposition 65: Not regulated

EU information:

Chemical Safety Assessment according to (EC)1907/2006:

This product has not carried out any Chemical Safety Assessment yet.

Australia Information:

Hazardous statement: Classified as hazardous according to NOHSC criteria.

16. Other Information

NFPA 704: Hazard Rating System

Health - 2 , Flammable - 1 , Reactivity - 1

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

The information in this Safety Data Sheet (SDS) is believed to be 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. It is subject to revision as additional knowledge and experience is gained. Roland DG does not warrant the completeness or accuracy of the information contained herein.