

Trade Name: **ACTIVA BioACTIVE-BASE / LINER**

| 1.0 Commercial Product Name and Supplier |                                                                                                                                                                                                                                         |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.1                                      | Commercial product name<br><b>ACTIVA BioACTIVE-BASE / LINER</b>                                                                                                                                                                         |
| 1.2                                      | Application / Use<br>Dental material for use by dental professional only.                                                                                                                                                               |
| 1.2.2                                    | SIC<br>851 Human health activity                                                                                                                                                                                                        |
| 1.2.3                                    | Use Category<br>55                                                                                                                                                                                                                      |
| 1.3                                      | Manufacturer<br><b>Pulpdent Corporation</b><br>80 Oakland Street, P.O. Box 780<br>Watertown, MA 02472 USA<br>Telephone: 1 617 926-6666 / Fax: 1 617 926-6262<br>Email: <a href="mailto:Pulpdent@pulpdent.com">Pulpdent@pulpdent.com</a> |
| 1.4                                      | Emergency Telephone Number<br>1-800-535-5053 (24 Hour / USA)                                                                                                                                                                            |
| 1.5                                      | Authorized European Representative<br>Advena Ltd.<br>Pure Offices, Plato Close<br>Warwick, CV34 6WE<br>United Kingdom                                                                                                                   |

| 2.0 Hazards Identification |                                                                                     |                                                                                                                                                                                                                                                                                                                                                                             |                     |                        |                         |                |   |      |         |   |      |                 |   |      |                    |   |      |  |
|----------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------------------|-------------------------|----------------|---|------|---------|---|------|-----------------|---|------|--------------------|---|------|--|
| 2.1                        | Classification                                                                      |                                                                                                                                                                                                                                                                                                                                                                             |                     |                        |                         |                |   |      |         |   |      |                 |   |      |                    |   |      |  |
| 2.1.1                      | Classification according to Regulation (EC) No 1272/2008 [CLP]                      | <table><thead><tr><th><u>Hazard Class</u></th><th><u>Hazard Category</u></th><th><u>Hazard Statement</u></th></tr></thead><tbody><tr><td>Eye irritation</td><td>2</td><td>H319</td></tr><tr><td>STOT SE</td><td>3</td><td>H335</td></tr><tr><td>Skin irritation</td><td>2</td><td>H315</td></tr><tr><td>Skin sensitization</td><td>1</td><td>H317</td></tr></tbody></table> | <u>Hazard Class</u> | <u>Hazard Category</u> | <u>Hazard Statement</u> | Eye irritation | 2 | H319 | STOT SE | 3 | H335 | Skin irritation | 2 | H315 | Skin sensitization | 1 | H317 |  |
| <u>Hazard Class</u>        | <u>Hazard Category</u>                                                              | <u>Hazard Statement</u>                                                                                                                                                                                                                                                                                                                                                     |                     |                        |                         |                |   |      |         |   |      |                 |   |      |                    |   |      |  |
| Eye irritation             | 2                                                                                   | H319                                                                                                                                                                                                                                                                                                                                                                        |                     |                        |                         |                |   |      |         |   |      |                 |   |      |                    |   |      |  |
| STOT SE                    | 3                                                                                   | H335                                                                                                                                                                                                                                                                                                                                                                        |                     |                        |                         |                |   |      |         |   |      |                 |   |      |                    |   |      |  |
| Skin irritation            | 2                                                                                   | H315                                                                                                                                                                                                                                                                                                                                                                        |                     |                        |                         |                |   |      |         |   |      |                 |   |      |                    |   |      |  |
| Skin sensitization         | 1                                                                                   | H317                                                                                                                                                                                                                                                                                                                                                                        |                     |                        |                         |                |   |      |         |   |      |                 |   |      |                    |   |      |  |
| 2.1.2                      | Classification according to Directive 67/548/EEC                                    | Irritant; Xi; R 36/37/38 – 43 (See SECTION 16 for full text of risk phrases)                                                                                                                                                                                                                                                                                                |                     |                        |                         |                |   |      |         |   |      |                 |   |      |                    |   |      |  |
| 2.2                        | <b>GHS Label Elements</b>                                                           |                                                                                                                                                                                                                                                                                                                                                                             |                     |                        |                         |                |   |      |         |   |      |                 |   |      |                    |   |      |  |
|                            | Hazard Pictograms                                                                   |                                                                                                                                                                                                                                                                                                                                                                             |                     |                        |                         |                |   |      |         |   |      |                 |   |      |                    |   |      |  |
|                            |  |                                                                                                                                                                                                                                                                                                                                                                             |                     |                        |                         |                |   |      |         |   |      |                 |   |      |                    |   |      |  |
|                            | Signal Word: <b>WARNING</b>                                                         |                                                                                                                                                                                                                                                                                                                                                                             |                     |                        |                         |                |   |      |         |   |      |                 |   |      |                    |   |      |  |
|                            | <b>Restricted to use by dental professional only.</b>                               |                                                                                                                                                                                                                                                                                                                                                                             |                     |                        |                         |                |   |      |         |   |      |                 |   |      |                    |   |      |  |
|                            | <b>Hazard Statements</b>                                                            |                                                                                                                                                                                                                                                                                                                                                                             |                     |                        |                         |                |   |      |         |   |      |                 |   |      |                    |   |      |  |
|                            | H319: Eye irritation. 2. May cause eye irritation.                                  |                                                                                                                                                                                                                                                                                                                                                                             |                     |                        |                         |                |   |      |         |   |      |                 |   |      |                    |   |      |  |
|                            | H335: STOT SE. 3. May cause respiratory irritation.                                 |                                                                                                                                                                                                                                                                                                                                                                             |                     |                        |                         |                |   |      |         |   |      |                 |   |      |                    |   |      |  |
|                            | H315: Skin irritation. 2. May cause skin irritation.                                |                                                                                                                                                                                                                                                                                                                                                                             |                     |                        |                         |                |   |      |         |   |      |                 |   |      |                    |   |      |  |
|                            | H317: Sensitization. 1. May cause an allergic skin reaction.                        |                                                                                                                                                                                                                                                                                                                                                                             |                     |                        |                         |                |   |      |         |   |      |                 |   |      |                    |   |      |  |
|                            | <b>Precautionary Statements</b>                                                     |                                                                                                                                                                                                                                                                                                                                                                             |                     |                        |                         |                |   |      |         |   |      |                 |   |      |                    |   |      |  |
|                            | P261: Avoid breathing vapor.                                                        |                                                                                                                                                                                                                                                                                                                                                                             |                     |                        |                         |                |   |      |         |   |      |                 |   |      |                    |   |      |  |
|                            | P280: Wear protective gloves and eye protection                                     |                                                                                                                                                                                                                                                                                                                                                                             |                     |                        |                         |                |   |      |         |   |      |                 |   |      |                    |   |      |  |
|                            | P305+P351: If in eyes, rinse cautiously with water for several minutes.             |                                                                                                                                                                                                                                                                                                                                                                             |                     |                        |                         |                |   |      |         |   |      |                 |   |      |                    |   |      |  |
|                            | P337+P313: If eye irritation persists, get medical advice/attention.                |                                                                                                                                                                                                                                                                                                                                                                             |                     |                        |                         |                |   |      |         |   |      |                 |   |      |                    |   |      |  |
|                            | P302+P352: If on skin, wash with plenty of soap and water.                          |                                                                                                                                                                                                                                                                                                                                                                             |                     |                        |                         |                |   |      |         |   |      |                 |   |      |                    |   |      |  |
|                            | P333+P313: If irritation or rash occurs, get medical advice/attention.              |                                                                                                                                                                                                                                                                                                                                                                             |                     |                        |                         |                |   |      |         |   |      |                 |   |      |                    |   |      |  |
|                            | P410+P411: Protect from sunlight. Store at temperature not exceeding 27°C / 80°F.   |                                                                                                                                                                                                                                                                                                                                                                             |                     |                        |                         |                |   |      |         |   |      |                 |   |      |                    |   |      |  |

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|     |                                                |                                                                            |                                                                                                                                                                                                                                                          |                                 |                                                                                                       |
|-----|------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-------------------------------------------------------------------------------------------------------|
| 3.0 | Composition                                    |                                                                            |                                                                                                                                                                                                                                                          |                                 |                                                                                                       |
| 3.1 | Chemical characterization of the preparation:  |                                                                            | Bioactive ionic resin with reactive glass filler                                                                                                                                                                                                         |                                 |                                                                                                       |
| 3.2 | Hazardous ingredients                          |                                                                            |                                                                                                                                                                                                                                                          |                                 |                                                                                                       |
|     | CAS Number                                     | Name of the Ingredient                                                     | Concentration                                                                                                                                                                                                                                            | Classification per 67/548/EEC   | Classification per Regulation (EC) No.1272/2008 (CLP).                                                |
|     | Proprietary                                    | Blend of diurethane and other methacrylates with modified polyacrylic acid | 53.2%                                                                                                                                                                                                                                                    | Irritant; Xi<br>R 3637//38 - 43 | Eye irritation, 2, H319<br>STOT SE 3, H335<br>Skin irritation, 2, H315<br>Skin sensitization, 1, H317 |
|     | 112945-52-5                                    | Silica, amorphous                                                          | 3.0%                                                                                                                                                                                                                                                     | Irritant; Xi,<br>R 36/37/38     | Eye irritation, 2, H319<br>STOT SE 3, H335<br>Skin irritation, 2, H315                                |
|     | 7681-49-4                                      | Sodium fluoride                                                            | 0.90%                                                                                                                                                                                                                                                    | Harmful (Xn);<br>R22-36/38      | Acute toxicity, 4, H302<br>Skin irritation, 2, H315<br>Eye irritation, 2, H319                        |
| 4.0 | First Aid Measures                             |                                                                            |                                                                                                                                                                                                                                                          |                                 |                                                                                                       |
| 4.1 | General Information                            |                                                                            | May be irritating to eyes, respiratory system and skin. Avoid contact with eyes and skin. Do not inhale vapors. May cause sensitization by skin contact. Show this safety data sheet to medical personnel. Get medical attention in case of uncertainty. |                                 |                                                                                                       |
| 4.2 | Inhalation                                     |                                                                            | Move to fresh air. If necessary, administer oxygen and/or artificial respiration. Seek medical attention.                                                                                                                                                |                                 |                                                                                                       |
| 4.3 | Skin Contact                                   |                                                                            | Take off contaminated clothing. Wash skin thoroughly with soap and water.                                                                                                                                                                                |                                 |                                                                                                       |
| 4.4 | Eye Contact                                    |                                                                            | Keep eyelids apart; flush with running water for 15+ minutes. Get medical attention.                                                                                                                                                                     |                                 |                                                                                                       |
| 4.5 | Ingestion                                      |                                                                            | Rinse mouth with water. Do not induce vomiting. Get immediate medical attention. May be irritating to mucous membranes. Never give anything by mouth to an unconscious person.                                                                           |                                 |                                                                                                       |
| 4.6 | Precautions for first responders               |                                                                            | Ventilate the area. Wear eye and skin protection.                                                                                                                                                                                                        |                                 |                                                                                                       |
| 4.7 | Information for physicians                     |                                                                            |                                                                                                                                                                                                                                                          |                                 |                                                                                                       |
|     | Symptoms                                       |                                                                            | Irritation or redness in eyes, throat or on skin.                                                                                                                                                                                                        |                                 |                                                                                                       |
|     | Hazards                                        |                                                                            | May be irritating to eyes, respiratory system and skin. May cause sensitization by skin contact.                                                                                                                                                         |                                 |                                                                                                       |
|     | Treatment                                      |                                                                            | As above under First Aid.                                                                                                                                                                                                                                |                                 |                                                                                                       |
| 5.0 | Fire Fighting Measures                         |                                                                            |                                                                                                                                                                                                                                                          |                                 |                                                                                                       |
| 5.1 | Suitable extinguishing media                   |                                                                            | Carbon dioxide, dry chemical, alcohol foam, or water fog. Water spray may be used to keep fire exposed containers cool.                                                                                                                                  |                                 |                                                                                                       |
| 5.2 | Extinguishing media to avoid                   |                                                                            | Do not use direct water stream                                                                                                                                                                                                                           |                                 |                                                                                                       |
| 5.3 | Special exposure hazards in a fire             |                                                                            | Heat may cause polymerization with rapid release of energy.                                                                                                                                                                                              |                                 |                                                                                                       |
| 5.4 | Special protective equipment for fire-fighters |                                                                            | Self-contained breathing apparatus                                                                                                                                                                                                                       |                                 |                                                                                                       |
| 6.0 | Accidental Release Measures                    |                                                                            |                                                                                                                                                                                                                                                          |                                 |                                                                                                       |
| 6.1 | Personal precautions.                          |                                                                            | Wear safety glasses, gloves and lab coat.                                                                                                                                                                                                                |                                 |                                                                                                       |

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| 6.2 | Environmental precautions | Avoid releasing large amounts of uncured material into the environment. Cured / set-up material is, to our knowledge, inert.                                                                       |
| 6.3 | Method for clean up       | Contain spilled material. Absorb or wipe up spill with suitable material (paper towels or cloths). Collect for disposal in a covered container. Wash area of spill with alcohol or soap and water. |

## 7.0 Handling and Storage

|     |               |                                                                                                                                                                                                                                                                                               |
|-----|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7.1 | Handling      | For use only by dental professionals. Follow good hygiene practices. Avoid direct / strong light sources, temperature extremes (>27°C/80°F, <5°C/40°F), contamination, cross contamination. Recap immediately after use.                                                                      |
| 7.2 | Storage       | Store product tightly capped in original container at cool room temperature (<25°C). Avoid direct, strong light, sources of ignition and extremes of temperature. Shelf life for unopened product is two years from date of manufacture, provided that the material has been stored properly. |
| 7.3 | Specific uses | Dental base/liner                                                                                                                                                                                                                                                                             |

## 8.0 Exposure Controls / Personal Protection

|         |                                 |                                                                                    |
|---------|---------------------------------|------------------------------------------------------------------------------------|
| 8.1     | Exposure limit values           | PEL: Not established. TLV: Not established.                                        |
| 8.2     | Exposure controls               |                                                                                    |
| 8.2.1   | Occupational exposure controls  | No special equipment required under normal conditions of use                       |
| 8.2.1.1 | Respiratory protection          | Good general ventilation is sufficient to control any airborne vapors.             |
| 8.2.1.2 | Hand protection                 | No special requirements other than the usual surgical gloves worn by dental staff. |
| 8.2.1.3 | Eye protection                  | No special requirements other than the usual safety glasses worn by dental staff.  |
| 8.2.1.4 | Skin protection                 | Good personal hygiene and safety practices; wearing a lab coat.                    |
| 8.2.1.5 | Other controls                  | Emergency eye wash fountain should be available. Wash hands after use.             |
| 8.2.2   | Environmental exposure controls | Cure material before disposing.                                                    |

## 9.0 Physical and Chemical Properties

|       |                                                        |                                                      |
|-------|--------------------------------------------------------|------------------------------------------------------|
| 9.1   | Characteristics                                        |                                                      |
| 9.1.1 | Appearance /Color / Physical state                     | Two pastes: Part A is yellowish; Part B is off-white |
| 9.1.2 | Odor                                                   | Faint, characteristic                                |
| 9.2   | Important health, safety and environmental information |                                                      |
| 9.2.1 | pH                                                     | Not determined                                       |
| 9.2.2 | Boiling point                                          | Not determined                                       |
| 9.2.3 | Flash point                                            | Not determined                                       |
| 9.2.4 | Flammability (solid, gas)                              | Not applicable                                       |
| 9.2.5 | Explosive properties                                   | Not applicable                                       |
| 9.2.6 | Oxidizing properties                                   | Not determined                                       |
| 9.2.7 | Vapor pressure                                         | < 1 mm Hg                                            |
| 9.2.8 | Specific gravity                                       | Part A: 1.460 ± 0.02 g/mL; Part B: 1.380 ± 0.02 g/mL |
| 9.2.9 | Solubility in water                                    | Nil                                                  |

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| 9.2.10 | Partition coefficient | Not determined |
| 9.2.11 | Viscosity             | Not determined |
| 9.2.12 | Vapor density         | Not determined |
| 9.2.13 | Evaporation rate      | Not determined |

#### 10.0 Stability and reactivity

|      |                                  |                                                                                                                                                                                                                  |
|------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10.1 | Conditions to avoid              | Temperature > 38°C, intense light, cross-contamination.                                                                                                                                                          |
| 10.2 | Materials to avoid               | Reducing and oxidizing agents, peroxides, amines.                                                                                                                                                                |
| 10.3 | Hazardous decomposition products | Under fire conditions and with amounts greater than that supplied in this product, hazardous polymerization may occur with heat build-up and release of carbon monoxide, carbon dioxide, and oxides of nitrogen. |
| 10.4 | Further information              | Stable material if stored and used as directed. Polymerization will occur when light-cured material is exposed to direct light.                                                                                  |

#### 11.0 Toxicological information

|      |                                                      |                                                                                                                                                                                                                                                                               |
|------|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11.1 | Acute toxicity                                       | Finished product in paste form presents a minimal health hazard under normal conditions of use and in the quantities necessary for dental restoration.<br>Sodium fluoride: Oral rat LD <sub>50</sub> : 180 mg/kg<br>Silica, amorphous: Oral rat LD <sub>50</sub> : 3160 mg/kg |
| 11.2 | Irritation and corrosiveness                         | May be irritating to eyes, respiratory tract, mucous membranes or skin on contact or with prolonged exposure.                                                                                                                                                                 |
| 11.3 | Sensitization                                        | May be sensitizing. Prolonged or frequent skin contact may cause allergic skin reactions in some susceptible individuals.                                                                                                                                                     |
| 11.4 | Sub-acute, sub-chronic and prolonged toxicity        | Prolonged and/or frequent skin contact may cause allergic skin reactions in susceptible individuals. Prolonged exposure to large amounts (more than in this product) may cause eye and respiratory irritation.                                                                |
| 11.5 | Carcinogenicity, Mutagenicity, Reproductive Toxicity | None known                                                                                                                                                                                                                                                                    |
| 11.6 | Empirical data                                       | Biocompatibility has been tested and found to be acceptable.                                                                                                                                                                                                                  |
| 11.7 | Clinical experience                                  | Activa Base/Liner is a new product that has been evaluated by dentist consultants. There have been no reports of adverse events.                                                                                                                                              |

#### 12.0 Ecological Information

|      |             |                                                                                                                                                                                            |
|------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12.1 | Ecotoxicity | Avoid release of uncured material into the environment. To the best of our knowledge, polymerized material is inert. No other information is available. Follow all government regulations. |
|------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### 13.0 Disposal Considerations

|      |             |                                                                                                       |
|------|-------------|-------------------------------------------------------------------------------------------------------|
| 13.1 | Regulations | Follow all local and national government regulations in disposing material or contaminated packaging. |
|------|-------------|-------------------------------------------------------------------------------------------------------|

#### 14.0 Transport Information

|      |              |                      |
|------|--------------|----------------------|
| 14.1 | Restrictions | None. Not regulated. |
|------|--------------|----------------------|

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| 15.0 | Regulatory Information                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 15.1 | EU Regulations                                        | Class IIa medical device under MDD 93/42/EEC.                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 15.2 | US FDA                                                | Class II Medical Device                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 15.3 | Health Canada                                         | Class III medical device                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 16.0 | Other information                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 16.1 | List of relevant R phrases                            | R36/37/38: Irritating to eyes, respiratory system and skin.<br>R43: Sensitizing by skin contact.                                                                                                                                                                                                                                                                                                                                                                |
| 16.2 | Hazard Statements                                     | H319: Eye irritation. Hazard category 2.<br>H335: Specific Target Organ Toxicity - Single exposure; hazard category. 3. Respiratory tract irritation.<br>H315: Skin irritation. Hazard category 2.<br>H317: Skin Sensitization. Hazard category 1.                                                                                                                                                                                                              |
| 16.3 | Precautionary Statements                              | P261: Avoid breathing vapor.<br>P280: Wear protective gloves and eye protection<br>P305 + P351: If in eyes, rinse cautiously with water for several minutes.<br>P337 + P313: If eye irritation persists, get medical advice/attention.<br>P302 + P352: If on skin, wash with plenty of soap and water.<br>P333 + P313: If irritation or rash occurs, get medical advice / attention.<br>P410 + P411: Protect from sunlight. Store at temperature ≤ 27°C / 80°F. |
| 16.4 | Restrictions on use                                   | Activa Base/Liner is to be sold to and used by dental professionals only.                                                                                                                                                                                                                                                                                                                                                                                       |
| 16.5 | Further information                                   | The information presented herein is believed to be factual as it has been derived from the works of persons believed to be qualified experts. However, nothing contained in this information is to be taken as a warranty or representation for which Pulpdent Corporation bears legal responsibility. The user should review any recommendations in the specific context of the intended use to determine whether they are appropriate.                        |
| 16.6 | Sources of key data                                   | National Institute for Occupational Safety (NIOSH)<br>US Occupational Safety and Health Administration (OSHA)<br>Eur-Lex European Union Law: Regulation (EC) No. 1272/2008 (CLP) and Regulation (EC) No. 1907/2006 (REACH).<br>Guidance on the compilation of safety data sheets. Version 1.1; December 2011. European Chemicals Agency                                                                                                                         |
| 16.7 | Information which has been added, deleted or revised. | This Safety Data Sheet has been revised to meet the requirements of the GHS SDS format, Regulations (EC) No. 1272/2008 (CLP) and (EC) No. 1907/2006 (REACH). Specifically, Sections 2.1, 2.2, 3.2, 16.2, 16.3 have been modified.                                                                                                                                                                                                                               |