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Safety Data Sheet (SDS)

Prepared in accordance with OSHA Hazard Communication Standard, 29 CFR 1910.1200, Hazardous Products Regulations (HPR) and WHMIS 2015, Regulation (EC) No 1907/2006 (REACH) and Regulation (EC) No 1272/2008 (CLP), and GHS Rev. 11

Rodin Luting Cement

Section 1. Product and Company Identification

Product Identifier: Dental Product, Cement**Trade Name:** Rodin Luting Cement**Recommended Use:** Cementation of 3D printed ceramic resin dental restorations.**Restrictions on Use:** For use by trained dental professionals. Not intended for consumer use.**Manufacturer:**

Manufacturer Name: Pac-Dent, Inc.
Address: 670 Endeavor Circle, Brea, CA 92821
Telephone: +1 (909) 839-0888
Email: rodin@pac-dent.com

Emergency telephone number: (U.S.) +1 800 424 9300**Emergency telephone number: (INT)** +1 703 527 3887

Section 2. Hazard(s) Identification

GHS Hazard Classification of the Substance or Mixture:**Signal Word:** Warning

Serious Eye Damage/Irritation: Category 2B

Skin Sensitizer: Category 1



GHS07

Precautionary Statement(s):**Prevention:**

P261: Avoid breathing fumes.
P264+P265: Wash hands thoroughly after handling. Do not touch eyes.
P272: Contaminated work clothing should not be allowed out of the workplace.
P280: Wear protective gloves/protective clothing/eye protection.

Hazard Statement(s):

H317: May cause an allergic skin reaction

H320: Causes eye irritation

Precautionary Statement(s):**Response:**

P302+P352: IF ON SKIN: wash with plenty of water
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.
P321: Specific treatment (see information on this label and safety datasheet)).
P333+P317: If skin irritation or rash occurs: Get medical help.
P337+P317: If eye irritation persists: Get medical help.
P362+P364: Take off contaminated clothing and wash it before reuse.

Disposal:

P501: Dispose of contents and container in accordance with local and national regulations.

Section 3. Composition/Information on Ingredients

Product is a mixture

Chemical Name	CAS Number	Concentration (% w/w)
Methacrylate oligomers / multifunctional methacrylate esters	Proprietary*	Proprietary*
Photoinitiator system	Proprietary*	Proprietary*

*The specific chemical identity is withheld because it is trade secret information of Pac-Dent, Inc.

Section 4. First-Aid Measures

Description of First Aid Measures**General Advice**

If medical advice is needed, have product container, label, or Safety Data Sheet available. Ensure medical personnel are aware of the material involved and take precautions to protect themselves

After Inhalation

Remove person to fresh air and keep comfortable for breathing. If irritation, coughing, or other symptoms develop or persist, seek medical attention.

After Skin Contact

Immediately wash affected skin thoroughly with soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing before reuse. If irritation, redness, or allergic skin reaction develops, seek medical advice/attention.

Section 4. First-Aid Measures

After Eye Contact

Immediately rinse cautiously with clean running water for at least 15 minutes, holding eyelids open. Remove contact lenses if present and easy to do. Continue rinsing. Seek medical attention if irritation persists.

After Swallowing

Rinse mouth thoroughly with water. Do **not** induce vomiting unless directed by medical personnel. Never give anything by mouth to an unconscious person. Seek medical attention if discomfort occurs or if significant quantity has been swallowed.

Most Important Symptoms and Effects, Both Acute and Delayed

- **Inhalation:** May cause respiratory irritation, coughing, or discomfort from vapors or mist.
- **Skin Contact:** May cause irritation, redness, or allergic skin sensitization after repeated exposure.
- **Eye Contact:** Causes irritation, redness, tearing, and discomfort.
- **Ingestion:** May cause gastrointestinal discomfort, nausea, or irritation.

Indication of Any Immediate Medical Attention and Special Treatment Needed

Treat symptomatically. No specific antidote is known. For sensitized individuals, manage allergic reactions according to clinical judgment.

Section 5. Fire-Fighting Measures

Extinguishing Media**Suitable Extinguishing****Media**

Use extinguishing media appropriate for the surrounding fire, including:

- Alcohol-resistant foam
- Carbon dioxide (CO₂)
- Dry chemical powder
- Water spray or fog (for cooling exposed containers)

Unsuitable Extinguishing Media

Do not use a direct water jet, as it may spread burning material.

Special Hazards Arising from the Substance or Mixture

The product is not classified as highly flammable; however, combustible organic components may burn under fire conditions.

Exposure to heat may cause:

- Thermal decomposition of resin components
- Formation of irritating, toxic, or hazardous fumes
- Pressure build-up in closed containers
- Possible polymerization with release of heat

Hazardous combustion/decomposition products may include:

- Carbon monoxide (CO)
- Carbon dioxide (CO₂)
- Nitrogen oxides (NO_x)
- Acrid organic fumes

Advice for Firefighters

- Wear self-contained breathing apparatus (SCBA) and full protective firefighting gear.
- Cool fire-exposed containers with water spray.
- Fight fire from a safe distance or protected location.
- Prevent contaminated firefighting runoff from entering drains, waterways, or soil.

Section 6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency

Procedures Avoid contact with skin, eyes, and clothing. Ensure adequate ventilation. Wear appropriate personal protective equipment, including:

- Safety glasses or chemical splash goggles
- Protective gloves (e.g., nitrile)
- Protective clothing / laboratory coat as needed

Avoid breathing vapors, mist, or aerosols generated during cleanup.

For non-emergency personnel, isolate the area and avoid unnecessary exposure.

Environmental Precautions

Avoid release to the environment. Prevent material from entering drains, sewers, surface water, or soil.

Contain spill if safe to do so. Notify relevant authorities if required by applicable local, regional, or national regulations.

Methods and Material for Containment and Cleaning Up

Small Spills:

- Absorb with inert material such as sand, vermiculite, or absorbent pads.
- Transfer collected material into a suitable waste container.

Uncured Resin Residue:

- Exposure to sunlight or artificial light may initiate polymerization.
- Resin may be cured under controlled light exposure prior to disposal where appropriate.

Large Spills:

- Dike or contain spill area.
- Collect mechanically using non-sparking tools where appropriate.
- Place waste into labeled disposal containers.

After cleanup, wash contaminated surfaces with suitable cleaning agents while preventing environmental release.

Section 6. Accidental Release Measures

Reference to Other Sections

- Section 8 for exposure controls and personal protective equipment
- Section 13 for disposal considerations

Section 7 for safe handling and storage information

Section 7. Handling and Storage

Precautions for Safe Handling

Use only in accordance with professional instructions and validated processing procedures.

Avoid contact with skin, eyes, and clothing. Avoid breathing vapors, mist, or aerosols that may be generated during handling, printing, cleaning, or finishing operations.

Wear appropriate personal protective equipment as described in **Section 8**.

Use only in well-ventilated areas. Wash hands thoroughly after handling and before eating, drinking, or smoking. Keep containers tightly closed when not in use. Avoid contamination of the product with foreign materials.

Do not reuse empty containers. Residual uncured resin may remain hazardous.

Protect material from unintended exposure to sunlight, UV light, or other curing light sources.

Conditions for Safe Storage, Including Any Incompatibilities

Store in the original tightly closed container in a cool, dry, well-ventilated area protected from direct sunlight and UV light.

Recommended storage temperature:

4°C to 25°C (40°F to 77°F)

Before printing, resin should be allowed to equilibrate to normal operating temperatures. Optimal printing performance is generally achieved when the resin temperature is within the range of approximately 21°C to 29°C (70°F to 85°F).

Protect from:

- Direct sunlight
- UV light / curing light sources
- Excessive heat
- Moisture
- Sources of ignition Do not freeze.

Keep away from incompatible materials such as:

- Strong oxidizing agents
- Strong reducing agents
- Peroxides
- Amines

Polymerization initiators Store upright to prevent leakage.

Shelf Life:

When stored under recommended conditions in the original sealed container, the product has a shelf life of 36 months from the date of manufacture.

Specific end use(s): For professional use only.

Section 8. Exposure Controls / Personal Protection

Control Parameters

No specific occupational exposure limits have been established for this mixture as a whole.

Where applicable, occupational exposure limits for individual components should be observed in accordance with local regulations. Use adequate ventilation during handling, printing, cleaning, finishing, or other operations that may generate vapors, aerosols, or dust. Local exhaust ventilation is recommended where airborne exposure may occur.

Exposure Controls

Appropriate Engineering Controls

- Use in a well-ventilated area.
- Provide local exhaust ventilation where vapors, mist, or airborne particulates may be generated.
- Use enclosed or automated processing systems where practical.
- Maintain eyewash stations and hand-washing facilities in work areas.

Individual Protection Measures (Personal Protective Equipment)

Eye / Face Protection

Wear safety glasses with side shields or chemical splash goggles where splashing or contact is possible.

Section 8. Exposure Controls / Personal Protection

Face protection may be used for high-exposure operations.

Skin Protection**Hand Protection**

Wear chemical-resistant protective gloves (e.g., nitrile gloves). Replace gloves if contaminated or damaged.

Body Protection

Wear suitable protective clothing, laboratory coat, or apron to prevent repeated or prolonged skin contact.

Respiratory Protection

Respiratory protection is not normally required under normal conditions of use with adequate ventilation.

If ventilation is insufficient, or if vapors, aerosols, dust, or mist are generated, use approved respiratory protection in accordance with applicable regulations.

General Hygiene Measures

- Wash hands thoroughly after handling and before breaks, eating, drinking, or smoking.
- Remove contaminated clothing and wash before reuse.
- Avoid contact with skin, eyes, and clothing.
- Do not eat, drink, or smoke while handling the product.

Environmental Exposure Controls

Avoid release to drains, soil, and waterways. Handle waste and residues in accordance with Section 13.

Section 9. Physical and Chemical Properties

Information on basic physical and chemical properties General Information**Appearance**

Form: Liquid

Color: Pigmented (varies by product variant)

Odor: Fruity, ester-like odor.

Odor Threshold: Not available

pH value at 20°C (68°F): Not applicable (non-aqueous)

Melting point/Melting range: Not available

Boiling point/Boiling range: Not available

Flash point: 93 °C (>200 °F) (PMCC)

Evaporation rate: Not available

Flammability (solid, gaseous): Not available

Auto-ignition Temperature: Not available

Decomposition temperature: Not available

Explosion limits

Lower: Not available

Upper: Not available

Vapor Pressure: Not available

Density: Not available

Relative density: Not available

Solubility: Nearly insoluble in water

Vapor Density: Not available

Evaporation rate: Not available

Partition coefficient (n-octanol/water): Not available

Viscosity: 220–250 cP at 25 °C (77 °F) (Brookfield)

Solvent content: Not available

Organic solvents: Not available

Water: Not available

Solids content: Not available

Specific Gravity: 1.10–1.125 at 25 °C (77 °F)

Section 10. Stability and Reactivity

Reactivity

The product is stable under recommended conditions of storage and use.

Uncured resin may undergo polymerization when exposed to heat, UV light, visible curing light, or contamination with reactive substances.

Chemical Stability

Stable when stored in the original sealed container under recommended storage conditions.

Product contains polymerizable components that may gradually react if improperly stored or exposed to light, heat, or contamination.

Possibility of Hazardous Reactions

Hazardous polymerization may occur under certain conditions. Conditions that may initiate uncontrolled polymerization include:

- Exposure to sunlight, UV light, or curing light sources
- Elevated temperatures
- Contamination with peroxides, amines, reducing agents, or other reactive materials
- Inhibitor depletion over time
- Bulk heating in closed containers

Runaway polymerization may generate heat and pressure and may rupture sealed containers.

Conditions to Avoid

- Heat
- Direct sunlight
- UV / curing light exposure
- Sources of ignition
- Contamination
- Extended storage outside recommended temperature range

Incompatible Materials

Keep away from:

- Strong oxidizing agents
- Strong reducing agents
- Organic peroxides
- Amines
- Polymerization initiators
- Strong acids or bases where reactive incompatibility may occur

Hazardous Decomposition Products

Section 10. Stability and Reactivity

Thermal decomposition or combustion may generate:

- Carbon monoxide (CO)
- Carbon dioxide (CO₂)
- Nitrogen oxides (NO_x)
- Irritating organic fumes
- Acrid smoke

Section 11. Toxicological Information

Information on Hazard Classes as Defined in Applicable GHS / CLP**Regulations Acute Toxicity**

Based on available data, the mixture is not classified for acute toxicity.

Uncured material may be harmful if swallowed in significant quantities and may cause irritation of the mouth, throat, or gastrointestinal tract.

Skin Corrosion / Irritation

Not classified as corrosive.

Prolonged or repeated skin contact may cause irritation, redness, or dryness.

Serious Eye Damage / Eye Irritation

Direct contact with uncured material may cause temporary eye irritation, redness, tearing, and discomfort.

Respiratory Sensitization

Not classified based on available data.

Skin Sensitization

Classified as Skin Sensitization Category 1.

Repeated or prolonged exposure may cause allergic skin reaction in susceptible individuals.

Additional Effects Related to Intended Dental Use

Uncured material may cause irritation to skin, eyes, and mucosal tissues upon contact.

Germ Cell Mutagenicity

Not classified based on available data.

Carcinogenicity

Not classified based on available data.

The components of this product are not intentionally added at reportable concentrations as carcinogens.

Hazard information provided in this Safety Data Sheet primarily applies to the uncured resin. Properly processed and cured material presents significantly reduced exposure potential under normal conditions of use.

Section 12. Ecological Information

Toxicity

Harmful to aquatic life with long lasting effects.

Uncured resin components may present toxicity to aquatic organisms. Avoid release to the environment.

Persistence and Degradability

No specific data are available for the mixture.

Uncured polymerizable resin components are not expected to degrade rapidly under normal environmental conditions.

Cured material is expected to be relatively inert.

Bioaccumulative Potential

No specific data are available for the mixture.

Certain organic components may have some potential for bioaccumulation depending on environmental conditions.

Mobility in Soil

No specific data are available.

Liquid uncured material may adsorb to soil or sediment surfaces and may exhibit limited mobility in water due to low water solubility.

Results of PBT and vPvB Assessment

Based on available information, this mixture does not contain components meeting criteria for PBT (Persistent, Bioaccumulative and Toxic) or vPvB (very Persistent and very Bioaccumulative) at reportable concentrations.

Endocrine Disrupting Properties

No components are known to be present at reportable concentrations that are identified as endocrine disruptors based on available data.

Other Adverse Effects

No additional adverse environmental effects are known.

Prevent uncontrolled release of uncured product to drains, waterways, and soil.

Refer to Section 13 for disposal considerations.

Section 13. Disposal Considerations

Waste Treatment Methods Product Disposal

Where practical, uncured resin should be fully cured prior to disposal. Cured resin waste, failed prints, support structures, and contaminated absorbent materials should be disposed of in accordance with applicable local, regional, national, and international regulations.

Do not discharge uncured resin, contaminated cleaning solvents, or wash solutions into drains, soil, or waterways.

Contaminated Packaging

Containers and packaging may retain hazardous residues of uncured resin. Do not reuse empty containers.

Dispose of contaminated packaging in accordance with applicable regulations. Where appropriate, containers may be drained and allowed to cure before disposal.

Cleaning Materials

Cleaning agents (e.g. alcohol used for rinsing) and contaminated absorbents should be collected and disposed of in accordance with applicable regulations.

Section 14. Transport Information

Transport Information

Department of Transportation (DOT)

- UN Number: Not regulated
- UN Proper Shipping Name: Not regulated
- Transport Hazard Class(es): Not regulated
- Packing Group: Not applicable
- Environmental Hazards: None known

Special Precautions for User: Transport in tightly closed original containers. Prevent leakage and avoid exposure to excessive heat or direct sunlight.

ADR/RID (Road/Rail Transport)

- UN Number: Not regulated
- UN Proper Shipping Name: Not regulated
- Transport Hazard Class(es): Not regulated
- Packing Group: Not applicable
- Environmental Hazards: None known

IMDG Code (Sea Transport)

- UN Number: Not regulated
- UN Proper Shipping Name: Not regulated
- Transport Hazard Class(es): Not regulated
- Packing Group: Not applicable
- Marine Pollutant: No
- EmS: Not applicable
- Special Precautions for User: None required under normal transport conditions.

ICAO/IATA Dangerous Goods Regulations (Air Transport)

- UN Number: Not regulated
- UN Proper Shipping Name: Not regulated
- Transport Hazard Class(es): Not regulated
- Packing Group: Not applicable
- Passenger and Cargo Aircraft: Not regulated as dangerous goods.

Special Precautions for User: Transport in tightly closed containers to prevent leakage. Avoid exposure to direct sunlight and temperatures exceeding 32°C to prevent premature polymerization. Ensure containers are securely stowed in an upright position.

Section 15. Regulatory Information

Safety, Health and Environmental Regulations / Legislation Specific for the Substance or Mixture

This Safety Data Sheet has been prepared in accordance with applicable international regulations, including:

- OSHA Hazard Communication Standard (29 CFR 1910.1200)
- Globally Harmonized System of Classification and Labelling of Chemicals (GHS)
- Regulation (EC) No 1907/2006 (REACH), as amended
- Commission Regulation (EU) 2020/878 (SDS requirements)
- Regulation (EC) No 1272/2008 (CLP)
- UK REACH Regulations
- Canada WHMIS (Workplace Hazardous Materials Information System)

CLP Classification

The product is classified and labeled in accordance with the CLP Regulation (EC) No 1272/2008.

Refer to Section 2 for full classification, hazard statements, and precautionary statements.

REACH Status

The components of this product are:

- Registered under REACH, or
- Exempt from registration, or
- Present below applicable concentration thresholds

PBT and vPvB Assessment

This mixture does not contain substances meeting the criteria for:

- Persistent, Bioaccumulative and Toxic (PBT), or
- Very Persistent and Very Bioaccumulative (vPvB)

in accordance with REACH Annex XIII, based on available data.

Endocrine Disrupting Properties

No components are known to be present at reportable concentrations that are identified as endocrine disruptors based on available information.

Other Regulatory Information

This product is intended for professional dental use and should be handled in accordance with applicable occupational safety regulations.

Chemical Safety Assessment

A Chemical Safety Assessment has not been carried out for this mixture.

Section 15. Regulatory Information

Hazard Pictograms:



GHS07

Signal Word: Warning

Section 16. Other Information

Abbreviations and Acronyms

- GHS – Globally Harmonized System of Classification and Labelling of Chemicals
- CLP – Classification, Labelling and Packaging Regulation (EC) No 1272/2008
- REACH – Registration, Evaluation, Authorisation and Restriction of Chemicals
- PBT – Persistent, Bioaccumulative and Toxic
- vPvB – Very Persistent and Very Bioaccumulative
- STOT – Specific Target Organ Toxicity
- SCBA – Self-Contained Breathing Apparatus

Key Literature References and Sources for Data

- Supplier Safety Data Sheets for raw materials
- European Chemicals Agency (ECHA) database
- OSHA Hazard Communication Standard (29 CFR 1910.1200)
- Regulation (EC) No 1907/2006 (REACH)
- Regulation (EC) No 1272/2008 (CLP)

Classification Procedure

The classification of this mixture is based on:

- Available data on individual components
- Application of CLP/GHS classification criteria
- Bridging principles and expert judgment

Relevant Hazard Statements (Full Text)

- H317: May cause an allergic skin reaction
- H320: Causes eye irritation

Training Advice

Users should be trained in:

- Safe handling of light-curable resin materials
- Use of appropriate personal protective equipment
- Prevention of skin contact and inhalation exposure
- Proper waste handling and disposal practices

Users should receive training in:

- Safe handling of methacrylate-containing photopolymer resins
- Proper use of personal protective equipment
- Prevention of skin and eye contact with uncured resin
- 3D printing and validated post-processing procedures
- Proper cleaning, curing, storage, and disposal practices

Product intended for professional dental use only:

Use only as directed for professional dental or laboratory applications.

Disclaimer

The information provided in this Safety Data Sheet is based on current knowledge and is intended to describe the product for the purposes of health, safety, and environmental requirements only.

It should not be construed as guaranteeing any specific property of the product.

The user is responsible for ensuring compliance with all applicable laws and regulations.

Manufacturer:

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