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SAFETY DATA SHEET

Dental Casting Ceramic Ingots — PRS-P-P01 / PRS-P-P02

According to GHS Rev.10 / EU CLP / US OSHA HazCom 2012

Section 1 — Identification

Product Name	PRS-P-p01 / PRS-P-p02 — Dental Heat-Pressed Casting Ceramic Ingots (Lithium Disilicate / Feldspathic / Leucite-Reinforced Glass Ceramic)
Recommended Use	Dental laboratory material for the fabrication of dental restorations (inlays, onlays, crowns, bridges, veneers) via lost-wax heat-pressing technique. For professional dental laboratory use only.
Restrictions	For professional dental lab use only. Not for direct patient application.
Issue Date / Version	2025-06-14 / V1.0

Section 2 — Hazards Identification

GHS Classification	Not classified as hazardous according to GHS criteria and Regulation (EC) No 1272/2008 (CLP).
Signal Word	None required
Pictogram	None required
Hazard Statements	None. This product does not meet the criteria for classification as hazardous.
Precautionary Statements	P261: Avoid breathing dust. P262: Do not get in eyes, on skin, or on clothing. P264: Wash hands thoroughly after handling. P271: Use only in well-ventilated area. P280: Wear protective gloves/eye protection/face protection. P501: Dispose per local/regional/national regulations.

Note: As a solid ceramic material in non-respirable block/ingot form, this product presents minimal hazard under normal conditions of use. Dust generated during grinding or divesting operations may cause mechanical irritation.

Section 3 — Composition / Information on Ingredients

This product is a mixture of inorganic oxide ceramic materials in solid glass-ceramic matrix form.

Silicon Dioxide (SiO₂, CAS 7631-86-9): 55–70% — Glass network former, non-hazardous

Aluminum Oxide (Al₂O₃, CAS 1344-28-1): 10–20% — Glass modifier/intermediate, non-hazardous

Lithium Oxide (Li₂O, CAS 12057-24-8): 5–15% — Crystallization nucleating agent, non-hazardous

Potassium Oxide (K₂O, CAS 12136-45-7): 5–12% — Glass modifier, non-hazardous

Sodium Oxide (Na₂O, CAS 1313-59-3): 1–5% — Flux, non-hazardous

Calcium Oxide (CaO, CAS 1305-78-8): 1–3% — Glass modifier; Eye Irrit. 2 (H319) / Skin Irrit. 2 (H315) / STOT SE 3 (H335)

Phosphorus Pentoxide (P₂O₅, CAS 1314-56-3): 1–5% — Nucleating agent, non-hazardous

Zirconium Dioxide (ZrO₂, CAS 1314-23-4): 0–5% — Opacifier/strengthening agent, non-hazardous

Cerium Oxide (CeO₂, CAS 1306-38-3): 0–2% — Color stabilizer, non-hazardous



Color Pigments (various metal oxides): < 2% — Shade adjustment, non-hazardous

** Note: Exact composition is trade secret. All components are bound within a fully crystallized glass-ceramic matrix and are chemically stable under normal handling conditions. No free crystalline silica is present in the finished product. All hazardous components above cut-off thresholds are disclosed per GHS.*

Section 4 — First Aid Measures

Skin Contact: Wash with soap and water for 15 minutes. Remove contaminated clothing. If irritation develops, seek medical advice.

Eye Contact: Do NOT rub. Rinse with eyewash or clean water for 15 minutes, keeping eyelids open. If eye irritation persists, seek an ophthalmologist.

Inhalation: Move to fresh air, rest. If cough or chest tightness persists, seek medical evaluation.

Ingestion: Do NOT induce vomiting. Rinse mouth, drink warm water. Seek medical attention if symptoms occur. Bring product packaging to emergency department.

Section 5 — Firefighting Measures

Suitable Extinguishing Media: Product is non-combustible. Use extinguishing media appropriate for surrounding fire: dry powder, CO₂, alcohol-resistant foam.

Unsuitable: None specific. Product does not burn.

Hazardous Combustion Products: None known. No hazardous decomposition products under fire conditions.

Special Protective Actions: Firefighters must wear SCBA and full protective gear as in any fire situation.

Section 6 — Accidental Release Measures

Small Spill: Wear nitrile gloves and KN95 mask. Sweep or vacuum up material. Place in labeled container for disposal.

Large Spill: Isolate area. Collect into waste drum. Avoid dry sweeping that generates airborne dust. Use wet methods or HEPA-filtered vacuum.

PPE: Full personal protective equipment required during cleanup of large quantities.

Section 7 — Handling and Storage

Handling: Wear nitrile gloves and safety glasses. Work in ventilated area. Use local exhaust ventilation when grinding or milling. Avoid contact with hydrofluoric acid. Wash hands thoroughly after handling.

Storage: Keep sealed in original packaging. Store at 5–30°C in a cool, dry environment. Keep away from hydrofluoric acid and strong alkalis. Protect from physical damage.

Section 8 — Exposure Controls / Personal Protection

Engineering Controls: Local exhaust ventilation and dust collection recommended during grinding, milling, or sandblasting operations.

Hand Protection: Nitrile or latex gloves.

Eye Protection: Safety goggles with side shields. Face shield when grinding.

Respiratory Protection: KN95 / N95 / P2 minimum when dust is generated; HEPA-filtered respirator if ventilation inadequate.

Body Protection: Laboratory coat or protective apron. Heat-resistant gloves when handling materials from furnace (>700°C).

Occupational Exposure Limits: PNO (OSHA PEL): 15 mg/m³ total dust, 5 mg/m³ respirable. SiO₂ (OSHA PEL): 0.05 mg/m³ respirable crystalline silica. ACGIH TLV: 10 mg/m³ inhalable, 3 mg/m³ respirable.

Section 9 — Physical and Chemical Properties

Appearance	Solid ingots / pellets / blocks
Color	Various tooth shades (A1–D4, bleach shades, translucent)
Odor	Odorless
Density	2.4–2.7 g/cm ³
Melting Point / Range	> 900°C (crystalline transformation range)
Solubility (Water)	Insoluble
pH	Not applicable (solid, insoluble)
Flash Point	Not applicable (non-combustible)
Decomposition Temperature	> 1000°C
Explosive Properties	Not explosive
Oxidizing Properties	Not oxidizing

Section 10 — Stability and Reactivity

Stability: Stable under standard sealed storage conditions. Reacts with hydrofluoric acid (etches glass-ceramic surfaces).

Incompatible Materials: Hydrofluoric acid (HF), strong alkalis at elevated temperatures.

Hazardous Polymerization: Will not occur (inorganic material).

Hazardous Decomposition Products: None under normal conditions. At extreme temperatures (>1000°C) may release metal oxide fumes.

Section 11 — Toxicological Information

Acute Effects: No acute toxicity expected from normal handling. Dust may cause mechanical irritation to eyes, skin, and respiratory tract. CaO component: LD50 (rat) > 2,000 mg/kg.

Sensitization: Not classified as a sensitizer.

Chronic Effects: Prolonged inhalation of high concentrations of dust may affect lung function. Silica is present in amorphous glass-ceramic matrix — no free respirable crystalline silica in finished product.

Carcinogenicity: Not classified by IARC, NTP, or OSHA. The glass-ceramic matrix renders silica non-bioavailable in crystalline respirable form.

Mutagenicity / Reproductive Toxicity: Not classified. No data available indicating such potential.

Section 12 — Ecological Information

Aquatic Toxicity: Not classified. Product is an inert, insoluble inorganic material. Do not release dust into waterways.

Persistence: Not applicable (inorganic). Persistent as inert mineral material in the environment.

Bioaccumulation: Not expected to bioaccumulate (inorganic, insoluble).

Other: Ceramic solid waste is considered environmentally inert.

Section 13 — Disposal Considerations

Unused Material: Dispose as non-hazardous inert solid waste per local regulations. EWC: 10 12 01 (waste ceramics).

Contaminated Packaging: Dispose as the product itself unless thoroughly cleaned.

Prohibition: Do NOT dispose into sewer systems or mix with household garbage without local authorization.

Section 14 — Transport Information

UN Number: Not classified as dangerous goods for transport.

Transport Classification: Non-dangerous, non-toxic, non-high-hazard. ADR/RID, IMDG, IATA/ICAO, US DOT: Not regulated.



Transport Conditions: Ship as ordinary goods. Keep sealed, at room temperature. Avoid direct sun and rough handling.

Section 15 — Regulatory Information

Compliance Standards: GHS Rev.10, EU CLP (EC) No 1272/2008, US OSHA HazCom 2012 (29 CFR 1910.1200), China GB/T 16483.

Other Regulations: EU REACH (EC) 1907/2006 — Components registered or exempt. US TSCA — Components listed. EU MDR 2017/745 — Raw material for dental devices Class IIa/IIb. ISO 6872:2015, ISO 9693:2019, GB/T 30345-2013.

Product Status: For professional dental laboratory use only. Not intended for consumer use.

Operator Requirement: All operators must read IFU and this SDS before handling the product.

Section 16 — Other Information

This SDS covers the PRS-P-p01 and PRS-P-p02 Dental Casting Ceramic Ingots. All operators must be trained in dental laboratory ceramic processing and chemical safety procedures.

If a batch quality issue or unexpected reaction occurs, stop use immediately and contact after-sales support.

H-Statements from Section 3: H315: Causes skin irritation. H319: Causes serious eye irritation. H335: May cause respiratory irritation. (Applicable to CaO component only; product as a whole is not classified.)

Disclaimer: Except where prohibited by law, the manufacturer assumes no liability for damages resulting from improper use, failure to follow IFU, or use of this product in combination with third-party materials not specifically recommended by the manufacturer.

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SDS Rev: 2025-06-14 | Product: PRS-P-p01 / PRS-P-p02 | For Professional Dental Lab Use Only