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SAFETY DATA SHEET

Firing Paste (Dental Ceramic Sintering Paste) — PRS-P-S01

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

Section 1 — Identification

Product Name	Firing Paste (Sintering Paste) — PRS-P-SP Series
Recommended Use	Auxiliary material for dental ceramic sintering. Used to position and stabilize CAD/CAM ceramic restorations on crystallization disks, sintering plates, or crystallization needles during high-temperature firing. For professional dental laboratory use only.
Restrictions	For professional dental lab use only. Not for direct patient application. Non-sterile product.
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	P262: Do not get in eyes, on skin, or on clothing. P264: Wash hands thoroughly after handling. P280: Wear protective gloves when handling. P501: Dispose per local/regional/national regulations.

Note: This is a water-based paste containing alumina, silica, cellulose thickener, and polyethylene glycol. Under normal conditions of use, it presents minimal hazard. The product is non-flammable, non-toxic, and non-corrosive.

Section 3 — Composition / Information on Ingredients

This product is a water-based paste mixture of refractory inorganic oxides, organic thickeners, and humectants.

Alumina / Aluminum Oxide (Al_2O_3, CAS 1344-28-1): 40–60% — High-temperature refractory filler; not classified as hazardous in bound form.

Quartz / Silica (SiO_2, CAS 14808-60-7): 20–35% — Refractory support material; not classified as hazardous in paste form. Note: respirable crystalline silica dust is classified as IARC Group 1 (carcinogenic) when inhaled as fine airborne dust. In this paste formulation, silica is bound in a wet matrix and not airborne.

Hydroxyethyl Cellulose (CAS 9004-62-0): 3–8% — Water-soluble thickener and binder; not classified as hazardous.

Polyethylene Glycol / PEG (CAS 25322-68-3): 2–5% — Humectant and plasticizer; not classified as hazardous.

Distilled Water (CAS 7732-18-5): 15–30% — Solvent and carrier; not classified as hazardous.

** Note: Exact composition is trade secret. All hazardous components above cut-off thresholds are disclosed per GHS. Silica is bound in a wet paste matrix and is not bioavailable as respirable dust under normal handling conditions. Once sintered at high temperature, the paste forms an inert ceramic residue.*

Section 4 — First Aid Measures

Skin Contact: Wash with soap and water. Remove contaminated clothing. If irritation develops, seek medical advice. Product is water-based and non-irritating under normal contact.

Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses if present. Continue rinsing. If eye irritation persists, seek medical attention.

Inhalation: Move to fresh air. Product is a paste with negligible vapor emission. If respiratory discomfort occurs, seek medical evaluation.

Ingestion: Rinse mouth with water. Do NOT induce vomiting. Seek medical attention if symptoms occur. Bring product packaging to medical personnel.

Section 5 — Firefighting Measures

Suitable Extinguishing Media: Product is non-flammable (water-based paste). Use extinguishing media appropriate for surrounding fire: water spray, dry powder, CO_2, alcohol-resistant foam.

Hazardous Combustion Products: Under extreme fire conditions, organic components (cellulose, PEG) may decompose, producing CO, CO_2, and trace organic fragments.

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

Section 6 — Accidental Release Measures

Small Spill: Wear nitrile gloves. Wipe up with damp cloth or paper towel. Place in general waste container.

Large Spill: Contain spill area. Collect paste material into waste container. Clean area with water. Avoid generating airborne dust from dried residue.

PPE: Nitrile gloves recommended during cleanup of large spills.

Section 7 — Handling and Storage

Handling: Wear nitrile gloves if prolonged contact expected. Work in a ventilated area. Avoid contact with eyes. Wash hands thoroughly after handling. Do not eat, drink, or smoke while handling.

Storage: Keep sealed in original packaging. Store at 5–30°C in a dry environment. Protect from direct sunlight. Keep container upright. Seal cap immediately after each use to prevent drying.

Section 8 — Exposure Controls / Personal Protection

Engineering Controls: Standard laboratory ventilation is sufficient. No special engineering controls required for paste form.

Hand Protection: Nitrile or latex gloves recommended for prolonged or repeated handling.

Eye Protection: Safety glasses recommended as general laboratory practice.

Respiratory Protection: Not required under normal use (paste form). If dried material is sanded or ground, use N95/P2 respirator to avoid inhaling alumina/silica dust.

Body Protection: Standard laboratory coat or work apron.

Occupational Exposure Limits: Alumina (Al_2O_3): OSHA PEL 15 mg/m³ (total dust), 5 mg/m³ (respirable).
Silica (SiO_2): OSHA PEL 0.05 mg/m³ (respirable crystalline silica).
Note: Product is a wet paste; OELs apply only if material is dried and generates airborne dust.

Section 9 — Physical and Chemical Properties

Appearance	White to milky white smooth paste
Odor	Odorless to very faint characteristic odor
pH	6.0–8.0 (neutral, aqueous dispersion)
Melting Point / Freezing Point	Not applicable (paste; water component freezes at ~0°C)
Boiling Point	~100°C (water component)

Flash Point	Not applicable (non-flammable, water-based)
Flammability	Non-flammable
Vapor Pressure	~17.5 mmHg at 20°C (water component)
Relative Density	~1.5–2.0 g/cm³
Solubility in Water	Partially dispersible; inorganic components insoluble
Viscosity	Thixotropic paste; 5,000–15,000 cps
Decomposition Temperature	Organic components decompose >200°C; inorganic components stable >1000°C

Section 10 — Stability and Reactivity

Stability: Stable under standard sealed storage conditions at room temperature. May dry out if left exposed to air for extended periods.

Incompatible Materials: None under normal conditions. Avoid mixing with strong acids or strong oxidizing agents.

Hazardous Polymerization: Will not occur.

Hazardous Decomposition Products: At high temperatures (>200°C), organic components (cellulose, PEG) may thermally decompose, producing CO, CO_2, and water vapor. At sintering temperatures (>850°C), only inert ceramic residue (alumina + silica) remains.

Section 11 — Toxicological Information

Acute Effects: No acute toxicity expected. May cause mild mechanical eye irritation on direct contact. Skin contact: non-irritating (water-based paste). Ingestion of small quantities: unlikely to cause harm; large quantities may cause gastrointestinal discomfort.

Sensitization: Not classified as a sensitizer. No known allergic reactions associated with this product.

Chronic Effects: No known chronic effects from normal use. If dried material is pulverized and inhaled as fine dust over prolonged periods, alumina dust may affect lung function and crystalline silica dust is a known respiratory hazard (silicosis risk). In paste form, no inhalation risk exists.

Carcinogenicity: Not classified as a carcinogen by IARC, NTP, or OSHA in paste form. Note: Crystalline silica (quartz) is classified as IARC Group 1 when inhaled as respirable dust. This product presents silica in a wet-bound, non-respirable paste matrix.

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

Section 12 — Ecological Information

Aquatic Toxicity: Not classified. Inorganic components (alumina, silica) are naturally occurring minerals and environmentally inert. Organic components (cellulose, PEG) are biodegradable.

Persistence: Inorganic components persist as inert minerals. Organic components are biodegradable. Do not release large quantities into waterways.

Bioaccumulation: Not expected to bioaccumulate.

Other: After sintering, the ceramic residue is environmentally inert and can be disposed as general mineral waste.

Section 13 — Disposal Considerations

Unused Material: Dispose as general non-hazardous solid waste per local regulations. Small quantities can be disposed with normal laboratory waste.

Sintered Residue: After firing, the inert ceramic residue can be disposed as general mineral waste.

Contaminated Packaging: Empty syringes may be disposed as general waste after contents are removed. Rinse if local regulations require.

Prohibition: Do NOT dispose of large quantities into sewer systems without local authorization.

Section 14 — Transport Information

UN Number: Not classified as dangerous goods for transport.

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

Transport Conditions: Ship as ordinary goods. Keep sealed, at room temperature. Avoid severe compression and vibration. Protect from hard impacts.

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 (inorganic minerals). US TSCA — All components listed. EU MDR 2017/745 — Accessory/auxiliary material for dental medical device manufacturing.

Product Status: For professional dental laboratory use only. Non-sterile. Not intended for consumer use or direct patient application.

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

Section 16 — Other Information

This SDS covers the ZonMed Firing Paste (Sintering Paste) PRS-P-SP Series. 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.

References: GHS Rev.10; EU CLP (EC) No 1272/2008; US OSHA HazCom 2012; China GB/T 16483; IARC Monographs Vol. 68 (Silica); ISO 6872:2015.

Disclaimer: Except where prohibited by law, the manufacturer assumes no liability for damages resulting from improper use, failure to follow IFU/TDS, or use of this product for purposes other than those specified. Users must verify suitability for their specific application.