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SAFETY DATA SHEET

Polyfix Resin Stain Kit — PRS-S-R Series

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

Product Name	Polyfix Dental Resin Coloring Gel Kit — PRS-S-R (R01–R20 + Diluent + Glaze)
Recommended Use	Dental prosthesis external staining (PMMA, PEEK, Composite, 3D-Printed Denture Base)
Restrictions	For professional dental lab use only
Issue Date / Version	2025-05-21 / V1.0

Section 1 — Identification

Product Name: Polyfix Dental Resin Coloring Gel Kit — PRS-S-R Series

Recommended Use: Dental prosthesis (PMMA, PEEK, composite) external staining; 3D printed denture base characterization

Restrictions: For professional dental lab use only

Section 2 — Hazards Identification

GHS Classification	Skin Irrit. 2 (H315) / Eye Irrit. 2A (H319) / Skin Sens. 1 (H317) / STOT SE 3 (H335)
Signal Word	WARNING
Pictogram	GHS07 — Exclamation Mark
Hazard Statements	H315 — Causes skin irritation H317 — May cause an allergic skin reaction H319 — Causes serious eye irritation H335 — May cause respiratory irritation
Precautionary Statements	P261 — Avoid breathing vapours/mist P280 — Wear protective gloves/eye protection/face protection P302+P352 — IF ON SKIN: Wash with plenty of water P305+P351+P338 — IF IN EYES: Rinse cautiously with water for several minutes P337+P313 — If eye irritation persists: Get medical advice/attention

Section 3 — Composition / Information on Ingredients

Polyurethane Acrylate Oligomer (Proprietary, Aliphatic): 50–70% — Non-hazardous polymer backbone

Diurethane Dimethacrylate (CAS: 72869-86-4): 15–30% — Base monomer, low volatility

Methacrylate Monomer Blend (Proprietary, Labelled as free of HEMA and MMA): 5–15% — Reactive diluent

Photoinitiator — TMO (CAS: 270586-78-2): 1–3% — Curing agent

Inorganic Pigments & Fillers (Proprietary Blend): 1–5%

Iron Oxides (CAS 1309-37-1 / 1317-61-9), Titanium Dioxide (CAS 13463-67-7), Nano Silica (CAS 7631-86-9)

Composition varies by shade (R01–R20).

* Note: Exact composition is trade secret. 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 rash persists, seek a dermatologist. Apply anti-allergy cream if needed.

Eye Contact: Do NOT rub. Rinse with eyewash or clean water for 15 minutes, keeping eyelids open. Seek an ophthalmologist immediately.

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

Ingestion: Do NOT induce vomiting. Rinse mouth, drink warm water. Bring product packaging to emergency department.

Section 5 — Firefighting Measures

Suitable Extinguishing Media: Dry powder, CO₂, alcohol-resistant foam.

Unsuitable: Direct water jet (may spread burning material).

Hazardous Combustion Products: CO, CO₂, irritating fumes.

Special Protective Actions: Firefighters must wear SCBA. Cool exposed containers with water spray.

Section 6 — Accidental Release Measures

Small Spill: Wear nitrile gloves and KN95 mask. Collect with lint-free paper. Place in sealed hazardous waste bag. Clean area with anhydrous ethanol.

Large Spill: Isolate area, contain with dam. Collect into chemical waste drum. Dispose via licensed medical/chemical waste handler. Do NOT drain into sewer.

PPE: Full personal protective equipment required during cleanup.

Section 7 — Handling and Storage

Handling: Wear nitrile gloves and anti-splash goggles. Work in ventilated area. Avoid contact with strong oxidizers, strong acids/bases, and high-intensity UV light.

Storage: Keep sealed and protected from light. Store at 5–25°C in a cool, dry environment. Keep upright. Max stack: 1.2 m. Store in locked cabinet away from children and UV curing equipment.

Section 8 — Exposure Controls / Personal Protection

Engineering Controls: Local exhaust ventilation recommended.

Hand Protection: Nitrile gloves (> 0.11 mm, breakthrough > 480 min).

Eye Protection: Safety goggles with side shields.

Respiratory Protection: KN95 minimum; organic vapor respirator if ventilation inadequate.

Body Protection: Laboratory coat or chemical-resistant apron.

Section 9 — Physical and Chemical Properties

Appearance	Thixotropic colored gel (various colors R01–R20)
Odor	Mild characteristic acrylate odor
Viscosity	2,000–5,000 cps (thixotropic)
Curing Wavelength	385–430 nm LED; 30–50 seconds
Layer Thickness	0.07–0.5 mm per application
Solubility (Water)	Insoluble
pH	Not applicable (non-aqueous system)
Flash Point	> 100°C (estimated)

Section 10 — Stability and Reactivity

Stability: Stable under standard sealed, light-proof storage conditions.

Incompatible Materials: Strong oxidizers, concentrated acids/bases, high-intensity UV radiation, high-temperature baking.

Hazardous Polymerization: Will not occur spontaneously. High temperature or prolonged strong light may cause in-bottle gelation.

Hazardous Decomposition Products: CO, CO₂, low-molecular-weight organic fragments upon thermal decomposition.

Section 11 — Toxicological Information

Acute Effects: Uncured gel — prolonged skin contact may cause redness, itching, allergic dermatitis. Eye contact causes conjunctival redness and pain. Dust from sanding cured layers or trace monomer vapor may irritate respiratory tract.

Sensitization: Contains methacrylate monomers; may cause skin/respiratory sensitization in susceptible individuals.

Chronic Effects: Repeated exposure may exacerbate sensitization. No known carcinogenic, mutagenic, or reproductive toxicity at occupational levels.

Section 12 — Ecological Information

Aquatic Toxicity: Do not release into waterways. Uncured resin is harmful to aquatic life.

Persistence: Cured polymer is inert and non-biodegradable. Uncured components may be partially biodegradable.

Bioaccumulation: Not expected to bioaccumulate significantly.

Other: Cured solid waste is considered environmentally inert.

Section 13 — Disposal Considerations

Uncured Waste: Classify as dental chemical hazardous waste. Seal and entrust to licensed waste handler for incineration.

Cured Waste: Dispose as general dental solid waste per local regulations.

Prohibition: Do NOT pour liquid waste into sewer systems or mix with household garbage.

Packaging: Empty containers may retain residue; handle as hazardous waste unless thoroughly cleaned and cured.

Section 14 — Transport Information

UN Number: Not classified as dangerous goods for transport.

Transport Classification: Non-dangerous, non-toxic, non-high-hazard.

Transport Conditions: Ship as ordinary dental chemical goods. Keep sealed, light-proof, 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.

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 complete Zonmed POLYFIX resin staining system. Best results are achieved when used with ZonMed 3D printing resins as part of the PRS Ecosystem.

All operators must be trained in dental laboratory chemical safety procedures.

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

Disclaimer: Except where prohibited by law, the manufacturer assumes no liability for damages resulting from improper use, failure to follow IFU, or use outside recommended applications. This SDS is provided as a safety reference and does not replace professional risk assessment.