

VPP Materials and Colour Systems for Jewelry, Arts and Wearable Articles

Casting, colour and finished-article assessment without automatic wearable or food-contact claims

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Highlights

- Formulation attributes support candidate selection but do not establish finished-wearable suitability.
- Ingredient or colour-additive status does not establish food-contact compliance of the mixed resin or article.
- Biocompatibility and food-contact compliance are different evaluations.
- REACH or nickel-release responsibility is assessed for the final wearable article.
- Colour gamut, opacity, cure depth and dosage depend on the complete formulation and process.

Abstract

Jewelry and arts workflows combine castable patterns, direct printed articles, colours, finishing and wearable exposure.

Suitability depends on the complete formulation, printing, washing, post-curing, surface finish, foreseeable contact and applicable product requirements. Absolute safety and wearable-safety shortcuts are removed.

Food-contact and nickel/release claims require the applicable final-article legal assessment and, where required, migration or release testing.

Keywords jewelry · arts · wearable · colour · castable · food-contact assessment

Source use. Product evidence is in [1]; skin/food-contact legal methods in [2–4]; colour controls in [5–6].

1. Manufacturing route

The paper separates sacrificial casting patterns, direct decorative prints and wearable articles. Each route has different material, finishing and acceptance needs.

- Identify exact resin and colour system.
- Control cure and finishing.
- Separate pattern from final cast article.



Release requires traceable evidence at every gate; a catalogue label cannot bypass the chain.

Figure 1. WP-45 evidence gates from controlled material description to final acceptance.

2. Colour and contact evidence

Supplier-documented ingredient status is recorded but not transferred automatically to the mixture. Dosage and colour-system numbers require current TDS evidence.

- Recalibrate cure after colour addition.
- Assess migration/release where applicable.
- Verify wear and surface durability.

3. Final-article boundary

Food contact, skin contact and nickel restrictions are evaluated for the finished article and intended conditions; biological and food-contact evaluations remain distinct.

4. Minimum controlled evidence before release

Control field	Required record	Release interpretation
Route	Pattern, decorative part or wearable article	Catalogue description only until evidence is linked
Formulation	Resin, colour, dose and cure	Control process variables and change triggers
Exposure	Skin/food conditions, wear and migration	Report method, result, uncertainty and limits
Article	Applicable restriction and final acceptance	Apply final acceptance and responsibility boundary



Description ≠ measured result ≠ certification or finished-device approval

Figure 2. WP-45 separates catalogue positioning, measured evidence and final application decisions.

KEY INSIGHT

Precise product or application language is retained only when the exact formulation, method, processed specimen and controlled evidence can be traced.

5. Limitations

- Absolute safety and wearable-safety claims are removed.
- Ingredient-level food-contact status is not transferred to the final article.
- Biological suitability is not food-contact compliance.
- Numeric colour claims require current evidence.
- Final-article release/migration testing may be required.

6. Conclusions

- Formulation attributes support candidate selection but do not establish finished-wearable suitability.
- Ingredient or colour-additive status does not establish food-contact compliance of the mixed resin or article.
- Colour gamut, opacity, cure depth and dosage depend on the complete formulation and process.
- This corrected candidate remains local and on HOLD until series-wide scientific, metadata and visual release checks are complete.

Revision note

Version 5.5 removes absolute safety, wearable-safety and ingredient-to-article food-contact implications and separates casting, colour, skin-contact and food-contact evidence for the final article.

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Disclosure. Dr. Juan Segurola is founder and Scientific Director of 3Dresyns by Resyner Technologies S.L., the supplier of the materials discussed.

References

- [1] 3Dresyns. Current jewelry, castable and colour-product TDS/SDS and reports.
- [2] Regulation (EC) No 1907/2006 (REACH), including applicable nickel-release restrictions.
- [3] EN 1811. Reference test method for release of nickel from articles intended for direct and prolonged skin contact.
- [4] Regulation (EC) No 1935/2004 on materials and articles intended to come into contact with food.
- [5] 3Dresyns WP-22. Colour Additives, corrected candidate.
- [6] 3Dresyns WP-25. Colour Stability and Light Fastness, corrected candidate.