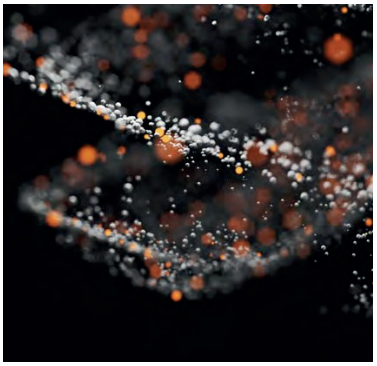
Olnica

Taggants

Technical Data Sheet



The Invisible Taggants That Make Frauds Visible

Robust taggants with luminescent properties and unique code for each brand

Integration / Application

Olnica Taggant is composed of Rare Earth elements. By fine tuning nature and content of these elements, Olnica can chemically encode a numerical identifier that acts as a unique code. With more than 1 billion of unique formula capability, Olnica Taggant complex formulation is counterfeit resilient by nature.

Olnica taggant can be integrated either:
· directly into any materials
· or printed on the product itself with invisble inks/varnishes.

Based on its unique encoding properties, Olnica Taggant allows to exclusively dedicate one or several formulas to a customer, a product, a manufacturing origin or a brand.

Markets

- Pharma
- Cosmetics
- Food & Beverage
- Luxury goods
- Plastics
- Automotive
- Aeronautics
- Fine art goods
- Documents security

Reading / Decoding

The unique formulas display luminescent properties. Once embedded into product or material, it is invisible under naked eye but can be revealed by Instant Field Inspection tools under a specific UV light(UVB – 312 nm).

Inspection tools goes from:
· Olnica Flashlight for visual identification.
· Olnica Pocket Lab for optical signature authentication.
· Laboratory detection of the molecular formula bringing indisputable forensic evidence for legal actions.

Insertable everywhere
· Print
· Paper and cardboard
· 3D metal printing
· Varnish, resin
· Plastics
· Textile

Food contact approved
Compatible with Food contact

efsa
European Food Safety Authority

Robust
Resists grinding, pressure and intense heat

Discrete
Odourless, colorless and invisible to the naked eye

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Olnica Taggants

Product Data

Technical Specifications

Appearance	White or light-colored powder
Particles size	Microparticles (D50 - 10 µm)
	or pre-dispersed nanoparticles (D50 – 150nm)
Density	2.3 - 2.5 g.cm3
Bulk density	0.3 - 0.4 g.cm3
Thermal stability	Up to 450°C
	Special product range for metal additive manufacturing
	Up to 1 500°C
Solubility	Insoluble in most common solvents
	(e.g., Water, Ethanol, Acetone, Ethyl Acetate, Hexane, Toluene)
Organic content	0 to 70%

Resilience and Fastness Properties

Shelf-life	Under standard environmental conditions
	Temperature: +5 to +35°C
	Humidity: 30 to 65 %HR
	and recommended storage conditions
	Taggant integrity is warranted for more than 10 years
Lightfastness	Good lightfastness (BWS 4-5)
(ISO 105_B02)	Evaluated on 10% Transparent Offset ink 1.5 g/m²
Chemical Resistance	Moderate resistance 2/5 versus acids and alkalis
	Good resistance 4/5 versus oxidizers
	Excellent resistance 5/5 versus solvents
	(e.g. Water, Xylene, Ethanol, Acetone, Ethyl Acetate, Mineral Spirit)

Security and Safety

General	Odorless
	Non flammable
	Non combustible
RoHS	Compliant
Food Contact	Compliant
	Regulation (EU) No 10/2011
	EFSA Evaluation
Toxicity	Nontoxic
	OECD 404, 405, 423

Please consult or request MSDS for more details

Plastics Processing

Compatible with most common resins (e.g., PE, PP, PET, PVC, PA, ABS). It can be used as standard colorant/filler for Masterbatching, Injection moulding, Extrusion, Cast or Blown film, Synthetic fibers, 3D filament printing.
Supplied as powder or masterbatch.

Recommended level: 5 - 500 ppm on final article depending on material formulation and/or product. Optimal concentration needs to be determined through a series of laboratory trials.

Coatings Processing

Compatible with Inkjet/digital printing and traditional printing (e.g., Offset, Pad printing, Screen printing, Heliogravure, Flexography).
Compatible with water-based, solvent-based, or UV-based technologies.
Supplied as powder or pigment concentrate (20-40% solid content).
Powder needs to be mixed or dispersed directly on coating material.
Pigment concentrate can be simply incorporated to an ink base/varnish via mixing with common laboratory or industrial equipment (e.g., high shear mixer, high speed disperser).

Recommended level: 0.5 - 10%. Optimal concentration needs to be determined through a series of laboratory trials.

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