LuminaMatrix™

Precision Mineral & Optical Substrates

"Optical brilliance begins at the molecular substrate level"

Beauty, Engineered.

UKD GROUP

LuminaMatrix™ Table of Contents

A guided tour of the LuminaMatrix™ substrate portfolio.

Interlocking V's — The master mark representing our core engineering principles

Precision

Exact molecular engineering at every stage

Architecture

Structured systems designed from the ground up

Engineering

Performance-validated formulation science

Luxury Performance

Premium sensory experience in every product

LuminaMatrix™ Technology Platform

High-purity Muscovite Mica and Synthetic Fluorphlogopite engineered for silky tactile elegance, flawless optical clarity, and radiant pearlescence

Phyllosilicate Architecture

Engineered sheet-like mineral platelets providing exceptional skin slip, smooth compressibility, and ultra-light payoff.

Optical Refraction

Tailored refractive indices designed for optimal interference coating with metal oxides, yielding brilliant luster and color purity.

Purity & Safety Control

Rigorous heavy-metal testing protocols ensuring ultra-clean, ethically validated, and skin-friendly cosmetic substrate matrices

LuminaMatrix™ Substrate Molecular Architecture

Muscovite Mica

$KAl_2(AlSi_3O_{10})(OH)_2$

Natural hydroxyl (OH) groups in the crystal lattice create natural elasticity and binding capability, providing smooth cushion compressibility for powder compacts.

Synthetic Fluorphlogopite

$KMg_3(AlSi_3O_{10})F_2$

Hydroxyl groups are completely replaced by fluorine atoms in a high-temperature melt process. This substitution creates pristine surface flatness and removes trace iron contamination.

LuminaMatrix™ Substrate Family

LuminaMatrix™ Natural

Muscovite Mica (INCI: Mica)

Core Attribute: Natural origin, velvety skin adhesion, excellent compression.

Mined from refined natural deposits. Delivers a soft-focus satin sheen, excellent pressability in compacts, and classic silky skin feel.

LuminaMatrix™ Crystal

Synthetic Fluorphlogopite

Core Attribute: Ultra-pure whiteness, crystal shine, zero heavy metals.

Lab-synthesized under ultra-pure conditions. Features pristine platelet edges, high transparency, and brilliant interference chromaticity.

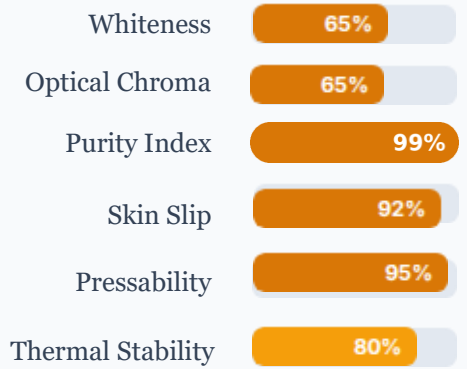
LuminaMatrix™ Natural Profile & Attributes

INCI Name: Mica (Natural Muscovite)

- **Silky Tactile Feel:** Provides superior skin slip and velvet glide in powders, emulsions, and anhydrous sticks.
- **Superior Compressibility:** Natural flexible sheet lattice bonds tightly in pressed compact powders with minimal binder.
- **Natural Origin Story:** Ideal for natural-certified makeup, mineral foundations, and clean cosmetic lines.

Natural Attribute Radar

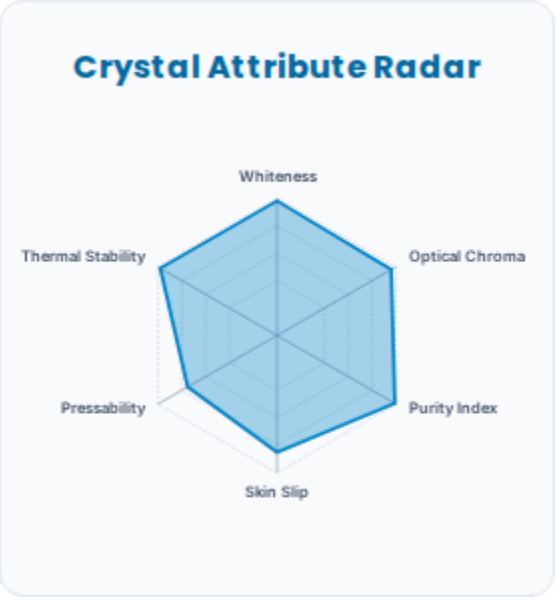
Performance Ratings



LuminaMatrix™ Crystal Profile & Attributes

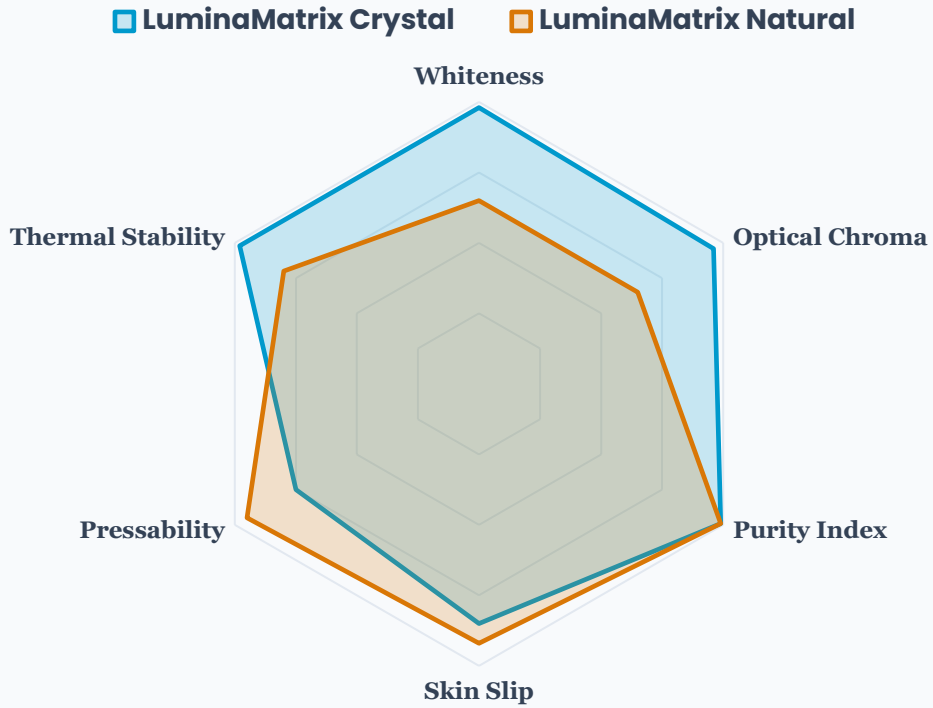
INCI Name: Synthetic Fluorphlogopite

- **Pure White Substrate:** Near-zero iron impurities (<0.03% Fe2O3) yield vibrant, haze-free interference colors.
- **Ultra-Smooth Platelets:** Controlled crystallization produces defect-free surface geometry for brilliant optical reflection.
- **Heavy Metal Free:** Complete freedom from mining impurities and heavy metal contamination.



LuminaMatrix™ Comparative Radar Overlay

Crystal and Natural substrates measured across six performance attributes (0-100 scale).



What the overlay shows

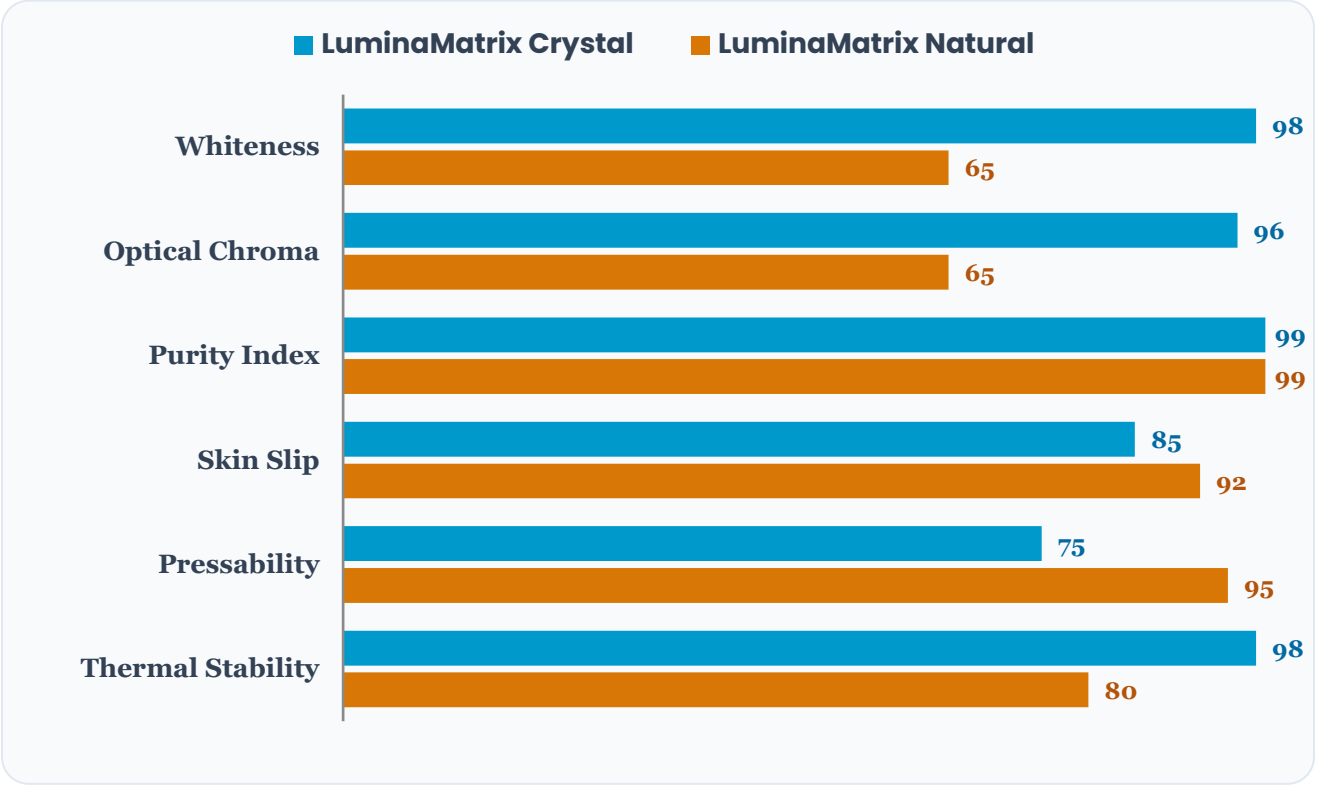
Crystal leads on optical performance - Whiteness (98) and Optical Chroma (96) far outreach Natural's 65.

Natural leads on tactile and formulation traits - Pressability (95) and Skin Slip (92).

Complementary fit - the two grades cover opposite strengths, together spanning brilliance and skin feel.

LuminaMatrix™ Comparative Bar Analysis

Attribute-by-attribute rating comparison for Crystal and Natural (0-100 scale).



Where the gaps are widest

Crystal's optical edge - Whiteness (+33) and Optical Chroma (+31) are the largest margins in its favor.

Natural's formulation edge - Pressability (+20) is its clearest lead over Crystal.

Closest race - Purity Index is now level (99 vs 99) - both grades match on formulation purity.

LuminaMatrix™ Variant Technical Matrix

Parameter	LuminaMatrix™ Natural	LuminaMatrix™ Crystal
INCI Designation	Mica	Synthetic Fluorphlogopite
Refractive Index (RI)	1.56 – 1.60	1.52 – 1.55 (Higher coating contrast)
Heavy Metal Purity	Refined mined grade (Fe2O3 0.5–1.5%)	Ultra-pure synthesized grade (<0.03% Fe2O3)
Platelet Geometry	Natural sheet-like flexible structure	Ultra-smooth, flat, uniform crystal edges
Primary Function	Skin slip, compaction, natural filler	High-chroma pearl base, pure sparkle
Ideal Applications	Pressed powder compacts, foundations, face balms	Highlighters, lip glosses, liquid eyeshadows

LuminaMatrix™ Performance Claims Grid

Validated performance claims per attribute, with the leading grade highlighted (0-100 scale).

Attribute	Performance Claim	Crystal	Natural
Whiteness	Brighter base for high-coverage finishes	**98**	65
Optical Chroma	Truer colour payoff under studio light	**96**	65
Purity Index	Clinical-grade purity, low irritation risk	**99**	**99**
Skin Slip	Effortless glide and blendability	85	**92**
Pressability	Compact integrity, resists cracking	75	**95**
Thermal Stability	Holds structure through heat and transit	**98**	80

LuminaMatrix™ Incorporation Guidelines

Pressed Powders: Use 20%–60% LuminaMatrix™ Natural as the core filler for binding strength and skin glide.

High-Chroma Color Cosmetics: Use 5%–30% LuminaMatrix™ Crystal for maximum pearl shine in eyeshadows and highlighters.

Lip & Liquid Systems: Combine with RheoMatrix™ mastergels to suspend platelets evenly without settling.

Shear Control: Low-to-moderate shear mixing preserves platelet size and optical brilliance.

Synergy Pro-Tip

Pair **LuminaMatrix™ Crystal** with **RheoMatrix™ PTIS** in lip gloss formulations to create brilliant, mirror-shine optical gloss with zero particle settling and plush cushion wear.

Talc-Free Powder Pro-Tip

Both **LuminaMatrix™ Crystal** and **Natural** can be used in talc-free pressed powders and loose powders.

Natural Base Pro-Tip

LuminaMatrix™ Natural can serve as the primary base for talc-free natural powders.

Thank You

LuminaMatrix™

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Proprietary Technology Platform

www.ukdgroup.in | info@ukdgroup.in