



Tolkabos Farm
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TECHNICAL DATA SHEET (TDS)

UV-Stabilized Metalized PE Reflective Film (Anti-UV VMPE Film)

Date: 2026

1. Product Introduction-Stabilized Metalized PE Reflective

Film is manufactured with food-grade & industrial-grade UV stabilizer added into virgin PE resin, followed by high-vacuum aluminum metallization treatment. Compared with standard VMPE film, this upgraded version features excellent anti-ultraviolet, anti-aging and outdoor weather resistance performance, while maintaining high light reflectivity, low permeability, soft toughness and stable mechanical properties. It is specially designed for long-term outdoor application scenarios such as open-field orchards, outdoor greenhouses and outdoor thermal insulation packaging.

2. Film Structure & Upgrade Description

Base Material: Virgin PE resin with imported UV stabilizer (uniform mixing, no precipitation)

Surface Treatment: High-precision vacuum metallized aluminum coating

Core Upgrade: Permanent UV stabilization function, effectively resist UVA/UVB ultraviolet radiation, prevent film aging, brittleness, fading and reflectivity attenuation

Appearance: Opaque mirror silver, uniform metallic layer, no color difference

Available Thickness: 14/15 / 18 / 20μm (customizable)



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3. Complete Technical Specifications

Parameter Category	Test Item	Unit	Standard Value	Test Standard / Remarks
Basic Parameters	Film Thickness	μm	14~20 (±5%)	ASTM D374
	Visible Light Reflectivity	%	≥88	Spectrometer Test
	Water Vapor Transmission Rate (WVTR)	g/m ² /24h	≤1.5	ASTM F1249
	Oxygen Transmission Rate (OTR)	cm ³ /m ² /24h	≤80	ASTM D3985
Mechanical Properties	MD Tensile Strength	MPa	≥15	ASTM D882
	TD Tensile Strength	MPa	≥10	ASTM D882
	MD Elongation at Break	%	≥250	ASTM D882
	TD Elongation at Break	%	≥300	ASTM D882
UV & Weather Resistance (Core Upgrade)	UV Stabilizer Content	%	6.0±0.5	Uniform dispersion, no migration
	UV Transmittance (300-400nm)	%	≤5	UV Spectrophotometer Test



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Parameter Category	Test Item	Unit	Standard Value	Test Standard / Remarks
	Outdoor Anti-Aging Duration	Month	≥12 (no brittleness/peeling/fading)	Accelerated UV Aging Test
Auxiliary Properties	Surface Gloss	GU	≥600	ASTM D2457
	Low Temperature Resistance	□	-20 (no crack)	Cold Resistance Test
	Heat Resistance	□	≤60 (no deformation)	Thermal Stability Test

4. Roll Specification

Standard Width: 1000mm–3000mm (±2mm tolerance)

Paper Core: 76mm (3 inch) / 152mm (6 inch) optional

Splices: 0 joints per roll

Surface Quality: No scratch, no oxidation spots, uniform metallized layer & UV agent distribution

5. Key Features

Added high-efficiency UV stabilizer, strong anti-ultraviolet and anti-aging ability, suitable for long-term outdoor use. High mirror light reflectivity, effectively improve light utilization rate for agricultural planting
Excellent moisture and oxygen barrier performance, good insulation effect. Soft and flexible, easy for winding, lamination and secondary processing. Stable aluminum coating, no peeling or falling off during processing. Superior weather resistance, avoid brittle fracture and performance attenuation caused by long-term sun exposure



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6. Application

Open-field orchard & outdoor greenhouse light reflection film
Outdoor thermal insulation and anti-aging packaging
Long-term outdoor composite barrier materials
Outdoor decorative reflective base film

7. Storage & Shelf Life

Storage Condition: Store in cool, dry and ventilated warehouse, avoid high temperature, humidity and long-term direct sunlight

Shelf Life: **18months** under original sealed packaging (extended 6months compared with standard film)

8. Remarks

All data above are typical average values for reference only

Food contact grade UV-stabilized formula is available. Please conduct machine trial test before mass production



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CERTIFICATE OF ANALYSIS (COA)

Product: UV-Stabilized Metalized PE Reflective Film

Certificate No.: COA-VMPE-UV-20260729

Inspection Date: 2026/7/30

Batch No.: BG2026073001

Conclusion: Fully Compliant & Qualified

Inspection Item	Standard Requirement	Test Result	Judgment
Film Thickness Tolerance	$\pm 5\%$	Within tolerance	Qualified
Light Reflectivity	$\geq 88\%$	89.2%	Qualified
WVTR	$\leq 0.9 \text{ g/m}^2/24\text{h}$	$0.75 \text{ g/m}^2/24\text{h}$	Qualified
OTR	$\leq 80 \text{ cm}^3/\text{m}^2/24\text{h}$	$68 \text{ cm}^3/\text{m}^2/24\text{h}$	Qualified
MD/TD Tensile Strength & Elongation	Meet ASTM D882 standard	Compliant	Qualified
UV Transmittance (300-400nm)	$\leq 5\%$	4.1%	Qualified
UV Stabilizer Dispersion	Uniform, no precipitation	Compliant	Qualified
Aluminum Layer Fastness	3M Tape No dealuminization, no transfer	3M Tape No dealuminization, no transfer	Qualified



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Inspection Item	Standard Requirement	Test Result	Judgment
Appearance Quality	No scratch, no oxidation spots, uniform color	Compliant	Qualified
Weather Resistance Stability	No aging/fading after accelerated test	Compliant	Qualified

Certification Statement:

All tested items of this batch of UV-stabilized metalized PE reflective film meet industry standard and customer technical requirements. The products are qualified for delivery.

Issued by: Manufacturer Quality Control Department

Validity: Permanent (for this batch)