TAIEI TECHNO PAINT CHEMICALS SECT.

FOR METAL & PLASTIC PARTS

Stardustone Series

High Bright Hologram Tone Paint

Coatings for metal and plastic

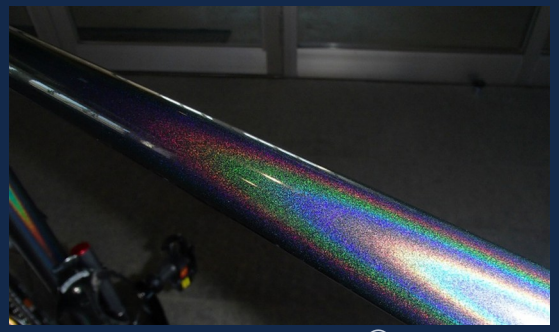
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TAIEI INDUSTRIES Co.,Ltd. TECHNO PAINT CHEMICALS SECT.



Stardustone 1000 color sample



Stardustone Example ①



Stardustone Example ②

FOR METAL & PLASTIC PARTS

Stardustone Series

High Bright Hologram Tone Paint

Product Description

STARDUSTONE hologram-tone coatings were developed from our super-bright metallic coating series, the “Metalstar Series”. Conventional holographic glitter particles have a thick cross section and protrude greatly from the film, so the clear coat had to be applied and polished many times to obtain a good appearance, which was a major production problem. STARDUSTONE solves this with thin-film deposition technology, giving a smooth film without protruding pigment.

The holographic pigment of STARDUSTONE is manufactured by the PVD (physical vapor deposition) method: material is deposited on a slit-shaped film, the deposited layer is separated from the film layer, and the layer is then ground and surface-treated. The result is an ultra-thin holographic pigment.

Coating of metal and plastic parts requires a dedicated base coat and top coat (3C3B). Mg and PP plastics require a further primer (4C3B).

Hologram Tone
Rainbow-color high brightness

Smooth Film
Ultra-thin pigment, no protrusion

PVD Method
Physical vapor deposition

Metal & Plastic
Dedicated base / top coat (3C3B)

TAIEI INDUSTRIES Co., Ltd.

We are a paint manufacturer specializing in the development and production of metallic paints for OEM automotive exterior and interior parts.

Head Office & Factory
1-1-3 Hayabuchi, Tsuzuki-ku, Yokohama-shi,
Kanagawa-ken 224-0025, Japan
TEL +81-45-591-2121 FAX +81-45-591-2124

Gifu Sales Office
1-34-1 Hottsu-cho Yokote, Hashima-shi,
Gifu-ken 501-6331, Japan
TEL +81-58-398-3794 FAX +81-58-398-4041

Web: https://www.taiei-sangyo.jp E-mail: info@taiei-sangyo.jp

Coating Systems at a Glance

System	Substrates	Base coat	Middle coat	Top coat
① 3C3B (Ecoplus TFX81 system)	ABS, PC/ABS	Ecoplus TFX81 DM-200 Gloss Black	Stardustone series	Ecoplus TFX81 Clear
② 3C3B (Polyrap system)	ABS, ABS/PC, PA, PA6, PA66, PPO, GTX	Polyrap G41 Gloss Black	Stardustone series	Polyrap GX81-X Clear
③ 3C3B for metals	Aluminum, SUS304, iron, etc.	Acryoh #4000 Each color	Stardustone 1000 / 500	Acryoh #3800 Clear

Substrate Compatibility

Plastics

ABS, ABS/PC, PA, PA6, PA66, PPO and GTX (PPE+PA). Mg and PP plastics require a 4C3B specification.

Metals

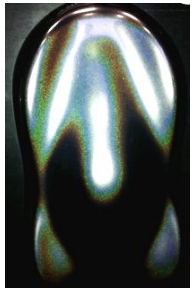
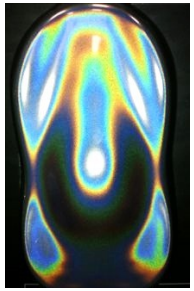
Aluminum, SUS304, iron, etc. (chemical conversion treatment, degreasing, etc. is required in advance).

Others

For materials not listed above, please contact us.

Types and Features

Each type has its own characteristics in appearance and performance.

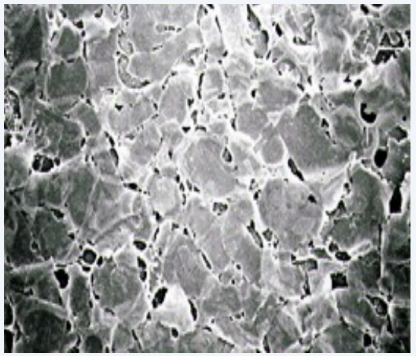
Product name	Base coat: White	Base coat: Black
Stardustone 500 Weakens the rainbow effect compared with Stardustone 1000, but increases the silver (metallic) effect.		
Stardustone 1000 Maximizes the effect of rainbow colors.		

Stardustone Paint Layer Structure

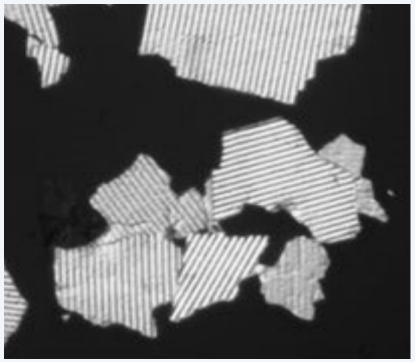


◀ Stardustone coating film layer within 1.0 µm

Pigment Particle Surfaces



Metalstar PVD aluminum pigment
PVD aluminum pigment surface



Stardustone hologram pigment
PVD hologram pigment particle surface

① Standard Coating Specification — Stardustone Series (3C3B), Ecoplus TFX81 System

Substrates: ABS, PC/ABS

Item	1 Base coat	2 Middle coat	3 Top coat
Paint	**Ecoplus TFX81** DM-200 Gloss Black	**Various 3C3B types of** Stardustone	**Ecoplus TFX81** Clear
Hardener	Ecohard L-100 hardener Ecohard L-80 hardener (low viscosity type)	—	Ecohard L-100 hardener Ecohard L-80 hardener (low viscosity type)
Thinner	YD-319 (standard drying) YD-319S (slow drying)	No adjustment	YD-319 (standard drying) YD-319S (slow drying)
Mixing ratio (by weight) Paint / Hardener / Thinner	80 / 10 (L-100) / 40–70 80 / 10 (L-80) / 50–60	No adjustment	80 / 10 (L-100) / 40–70 70 / 10 (L-80) / 40–60
Pot life	8 hours	—	8 hours
Recommended viscosity (Anest Iwata NK-2 cup)	11±1 sec	7±1 sec	11±1 sec
Spray gun (recommended nozzle)	Conventional air spray gun Nozzle diameter 1.0–1.5 mm	LVLP air spray gun Nozzle diameter within 1.3 mm Recommended: Mesac G05-23 / S-14-23	Conventional air spray gun Nozzle diameter 1.0–1.5 mm
Atomizing air pressure	0.2–0.3 MPa	0.15–0.25 MPa	0.2–0.3 MPa
Spray volume	1.25–1.5 turns	0.125–0.25 turns	1.25–1.5 turns
Number of coats (laps)	About 4–6	About 6–10	About 4–6
Standard film thickness	20–25 µm	Less than 1.0 µm	20–25 µm
Setting time	About 5–10 min	About 5–10 min	About 5–10 min
Drying condition	80°C × 30 min (KEEP)	80°C × 30 min (KEEP)	80°C × 30 min (KEEP)

Remarks

- Shake each paint can well before use.
- Always filter the paint when filling the paint cup or paint supply tank.

② Standard Coating Specification — Stardustone Series (3C3B), Polyrap System

Substrates: ABS, ABS/PC, PA, PA6, PA66, PPO, GTX (PPE+PA)

Item	1 Base coat	2 Middle coat	3 Top coat
Paint	**Polyrap G41** Gloss Black	**Various 3C3B types of** Stardustone	**Polyrap GX81-X** Clear
Hardener	Polyrap G41 hardener	—	Polyrap GX81-X hardener
Thinner	1019 thinner (standard drying)	No adjustment	1019 thinner (standard drying)
Mixing ratio (by weight) Paint / Hardener / Thinner	40/10/20–25	No adjustment	80/10/50–70
Pot life	8 hours	—	8 hours
Recommended viscosity (Anest Iwata NK-2 cup)	11±1 sec	7±1 sec	11±1 sec
Spray gun (recommended nozzle)	Conventional air spray gun Nozzle diameter 1.0–1.5 mm	LVLP air spray gun Nozzle diameter within 1.3 mm Recommended: Mesac G05-23 / S-14-23	Conventional air spray gun Nozzle diameter 1.0–1.5 mm
Atomizing air pressure	0.2–0.3 MPa	0.15–0.25 MPa	0.2–0.3 MPa
Spray volume	1.25–1.5 turns	0.125–0.25 turns	1.25–1.5 turns
Number of coats (laps)	About 4–6	About 6–10	About 4–6
Standard film thickness	20–25 µm	Less than 1.0 µm	20–25 µm
Setting time	About 5–10 min	About 5–10 min	About 5–10 min
Drying condition	80°C × 30 min (KEEP)	80°C × 30 min (KEEP)	80°C × 30 min (KEEP)

Remarks

- Shake each paint can well before use.
- Always filter the paint when filling the paint cup or paint supply tank.

③ Coatings for Metal — Standard Coating Specification, Stardustone Series

Substrates: aluminum, SUS304, iron, etc. (chemical conversion treatment, degreasing, etc. is required in advance)

Item	1 Base coat	2 Middle coat	3 Top coat
Paint	**Acryoh #4000** Each color	**Stardustone 1000-S (standard)** Stardustone 1000-W (midwinter) Stardustone 500-S (standard) Stardustone 500-W (midwinter)	**Acryoh #3800** Clear
Thinner	SGL-40 (standard drying) AD (slow drying) ST-41 (for electrostatic coating)	No adjustment	SGL-40 (standard drying) AD (slow drying) ST-41 (for electrostatic coating)
Mixing ratio (by weight) Paint / Thinner	100/50–70	No adjustment	100/30–40
Recommended viscosity (Anest Iwata NK-2 cup)	14–17 sec	7±1 sec	12–14 sec
Spray gun (recommended nozzle)	Conventional air spray gun Nozzle diameter 1.0–1.5 mm	LVLP air spray gun Nozzle diameter within 1.3 mm Recommended: Mesac G05-23 / S-14-23	Conventional air spray gun Nozzle diameter 1.0–1.5 mm
Atomizing air pressure	0.2–0.3 MPa	0.15–0.25 MPa	0.2–0.3 MPa
Spray volume	1.25–1.5 turns	0.125–0.25 turns	1.25–1.5 turns
Number of coats (laps)	About 4–6	About 6–10	About 4–6
Standard film thickness	20 µm	Around 1.0 µm	20–25 µm
Setting time	About 5–10 min	About 5–10 min	About 5–10 min
Drying condition	150°C × 20 min (KEEP)	150°C × 20 min (KEEP)	150°C × 20 min (KEEP)

Remarks

- Shake each paint can well before use.
- Always filter the paint when filling the paint cup or paint supply tank.

Paint Film Performance — Plastic Substrates (3C3B)

Test results for Stardustone series on plastic substrates.

Test item	Test method	Result
Film hardness	Mitsubishi Hi-Uni pencil	**F**
Initial adhesion	1.0 mm cross-cut, adhesive tape peel	**100/100**
Impact resistance	DuPont impact tester, 2.9 N (300 gf), 20 cm or more	**PASS**
Tack resistance	Gauze, 70°C × 2 h, 500 gf, ⌀40 mm	**PASS**
Adhesion after humidity exposure	50°C, 98% RH, 240 h, then adhesion test	**100/100**
Water discoloration resistance	5 ml distilled water dropped inside a ring sealed to the test surface; 55°C × 4 h	**ΔE* ≤ 0.8**
Alkali resistance	5 ml NaOH (0.1 N) dropped inside a ring sealed to the test surface; 55°C × 4 h	**ΔE* ≤ 1.5**
Acid resistance	5 ml H_2SO_4 (0.1 N) dropped inside a ring sealed to the test surface; 23°C × 24 h	**ΔE* ≤ 1.5**
Volatile oil resistance	Immersed in No. 1 volatile oil at room temperature (20°C) for 3 h	**PASS**
Dry rubbing fastness	Gakushin-type rubbing tester, 5 layers of gauze, 500 g load × 200 cycles	**PASS** No substrate exposure
Alcohol-based hair liquid resistance	Hair liquid (1 g/100 cm²), 80°C × 168 h, then abrasion test (2 kg × 200 cycles)	**PASS** No substrate exposure
Beef tallow resistance	Beef tallow (2 g/100 cm²), 80°C × 168 h, then abrasion test (2 kg × 200 cycles)	**PASS** No substrate exposure
Sunscreen resistance	Sunscreen cream (0.5 g/100 cm²), 55°C × 4 h, then abrasion test (2 kg × 200 cycles)	**PASS** No substrate exposure
Light resistance	FOM (fade meter), 400 h	**Gloss retention ≥ 95%** **ΔE* ≤ 3.0**
Accelerated weathering	SWOM (sunshine weather meter), 1000 h	**Gloss retention ≥ 90%** **ΔE* ≤ 3.0**

Paint Film Performance — Metals, Stardustone 1000 & 500

Test material: epoxy polyester powder-coated aluminum plate, 3C3B coating after powder coating, total film thickness 48–55 µm. Drying: 150°C × 20 min (KEEP) for every coat
Base coat: Acryoh #4000 High Gloss Black → Middle coat: Stardustone 1000 / 500 → Top coat: Acryoh #3800 Clear

Test item	Test method	Result
Adhesion	1.0 mm cross-cut, adhesive tape peel	**100/100**
Film hardness	Mitsubishi Hi-Uni pencil	**H**
Impact resistance	At normal temperature, weight 2.94 N, height 40 cm	**PASS** No cracking or peeling
Acid resistance	5 ml H_2SO_4 (0.1 N) dropped inside a ring sealed to the test surface; 20°C × 24 h	**ΔE* ≤ 1.5**
Alkali resistance	5 ml NaOH (0.1 N) dropped inside a ring sealed to the test surface; 55°C × 4 h	**ΔE* ≤ 1.5**
Water discoloration resistance	5 ml distilled water dropped inside a ring sealed to the test surface; 55°C × 4 h	**ΔE* ≤ 0.8**
Volatile oil resistance	Immersed in No. 1 volatile oil at 20°C for 3 h	**PASS**
Water resistance (60°C)	Immersed in hot water at 60°C for 72 h	**PASS** 25/25
Water resistance (40°C)	Immersed in hot water at 40°C for 240 h; adhesion test (2 mm) 24 h after the end of the test	**PASS** 25/25
Salt spray test	5% saline sprayed for 480 h at 35 ± 2°C onto a specimen tilted at 20° ± 5° (specimen cross-cut beforehand)	**PASS**
CASS test	5% saline with acetic acid and copper chloride, adjusted to pH 3.0, sprayed for 240 h at 50 ± 5°C onto a specimen tilted at 20° ± 5° (cross-cut beforehand)	**PASS**
Filiform rust resistance (TAC test)	(24 h salt spray → humidity test 40°C, 85% RH, 120 h → 24 h at room temperature) × 8 cycles (specimen cross-cut beforehand)	**PASS**
Accelerated weathering	Sunshine carbon-arc weathering test (SWOM), 1000 h	**Gloss retention ≥ 85%** **ΔE* ≤ 3.0**