

Aluma-Tough® a metalphoto® product

Photo Anodized Aluminum



Exceptionally Durable. Widely Specified. High Resolution.

For over 50 years, industrial and military engineers have specified Metalphoto photosensitive anodized aluminum for durable nameplates, barcode labels, service schematics and control panels installed in harsh operating environments. Metalphoto's proprietary technology permanently seals a UV-stable image inside of anodized aluminum, offering the confidence of unparalleled durability, image resolution and readability.

Metalphoto is available from NapTags.com with our Aluma-Tough® product. Aluma-Tough can be custom printed and cut to fit your identification needs exactly. Visit our web site at www.NapTags.com or call our team of experts to discuss your identification project.

Product Benefits

Exceptionally Durable:

- UV-stable image is permanently sealed within the anodized aluminum.
- Virtually impervious to chemicals, heat, abrasion, salt spray and sunlight.
- Certified for 20+ years outdoor applications.
- Earned more top scores than any other barcode label material tested by the U.S. Navy (NSWC, Corona Division, IUID Center; August 2011).
- Withstands multiple sterilization cycles and will not fade or harbor bacteria as per ANSI/AAMI ST79 steam sterilization and sterility assurance.

Widely Specified:

- Meets a wide array of commercial, government and military specifications.
- Notable certifications include: MIL-STD-130N, STANAG 2290, GGP-455B, MIL-DTL-15024F, MIL-P-19834B and A-A-50271.

High Resolution:

- Photographic images afford extreme detail and contrast at any size.
- Anti-counterfeit security printing is available.



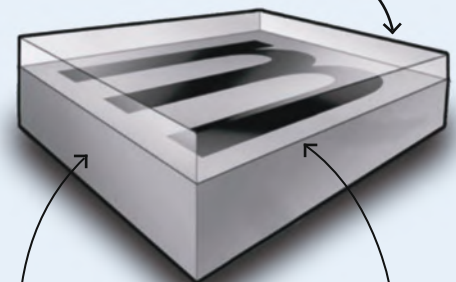
NapTags.com
NapNameplates.com
NapADASigns.com
NapSupply.com

Aluma-Tough® metalphoto®

Cross-section

Anodic Layer

The glass-clear, sapphire-hard anodized layer resists chemicals, paint, abrasion and dirt.



Sealed Image

Black graphics are metallic silver particles that hold to extreme heat and sunlight exposure.

Aluminum Layer

The rigid aluminum base will not peel, crack or delaminate.

**When durability matters,
choose Aluma-Tough.**

7777 Childsdale Ave NE | Rockford, MI 49341
Toll Free: 1-800-451-3330

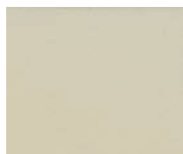
www.NapIndustrialGroup.com
info@napindgroup.com

Product Specifications

Applications:

- Bar Code Labels
- Long-Term Asset Tags
- Machine Panel Fronts
- Nameplates/Data Plates
- Equipment Labels
- Name Badges
- Plaques & Awards
- Aircraft Data Plates, Placards and Panel Fronts
- Energy/Mining Compliance Tags
- Shipping/Transportation Labels
- Architectural/Wayfinding Signage
- Diagrams & Schematics
- Photographic Reproductions
- Anti-Counterfeit Security Labels

Finishes:



Matte—non-reflective with dull finish



Satin – semi-gloss medium reflective material



#4 – brushed to resemble a stainless steel finish



Gloss—highly reflective, mirror-like

Specifications:

Material: anodized aluminum sheets (1100 alloy)

Sizes: 10" x 12", 12" x 20", 20" x 24", 20" x 40", 24" x 40"

Thicknesses: .012", .020", .032", .063", .125"

Aluma-Tough Performance Characteristics:

Meets many DoD requirements including MIL-STD-130N, GGP-455B, MIL-A-8625F and MIL-DTL-15024F.

Characteristic	Result
Abrasion Resistance	No pronounced image loss, degradation or reduced readability after 7,000 cycles on an abrading wheel.
Acid Corrosion	No deterioration or image degradation after 24 hours in 3% nitric acid.
Heat Resistance	No legibility loss or degradation when subjected to 1,000°F.
Salt Spray Corrosion	No deleterious effect after a 720-hr salt spray (fog) test. 2,6 "Very Good" corrosion resistance after 113 days seawater exposure.
Accelerated Light and Weather Resistance	No pronounced deterioration of legibility after 400-hr carbon arc weatherometer exposure. (Estimated 20+ year outdoor life)
Accelerated Oxygen Aging	No discoloration or fading after 96-hr/300psi/ 70° Coxygen bomb aging.
Stain Resistance	No black fading when plates are exposed to tincture of iodine.
Cleaning Resistance	No deleterious effects when tested with alkaline cleaners (MILC-87937 or equivalent) for aircraft surfaces.
Low Temperature Resistance	No deleterious effect or image fade after 1 hour at -50°F. No impairment of legibility upon exposure at -67°F.
Organic Solvent Resistance	No softening, staining or noticeable fade after 24-hr exposure to: JP-4 fuel, Gasoline, Mineral Spirits, Methyl Ethyl Ketone, Turpentine, Turbine & Jet Fuel, Kerosene, Xylol, Acetone, Toluol, Heptane, Trichlorethylene, MIL-H-5606 Hydraulic Fluid and MIL-L-7808 Jet Engine Oil.
Fungus Resistance	Visual reading of "0" per ASTM-G21.
Thermal Shock	No deterioration after 3 cycles between -65°C and 125°C
Moisture Resistance	No deterioration after 10 humidity cycles per MIL-STD-202, method 106.

How To Order:

Call 1-800-451-3330 or visit our website at www.napindustrialgroup.com.

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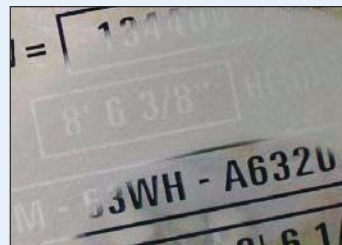
Aluma-Tough (Metalphoto) vs. Stainless Steel



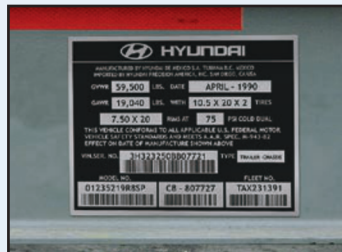
Weather/Sunlight Degradation and Fading



Road Salt Corrosion Damage



Abrasion Damage



Aluma-Tough - Remains readable with no deterioration under the harshest of conditions.

- **Durability:** The Aluma-Tough image remains readable after prolonged exposure to salt water, synthetic road salts, sunlight/ weather and impact abrasion.
- **Legibility:** Aluma-Tough graphics are cleaner and of higher resolution than etched stainless steel. That makes for great looking VIN plates but more importantly, it allows one to effectively incorporate the use of machine readable bar codes for asset tracking.
- **Affordability:** Aluma-Tough parts typically cost 10-20% less than etched and filled stainless steel.