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**Permanency and Mil-Std-130:** As outlined in Mil-Std-130, "Marking, labels... shall be as permanent as the normal life expectancy of the item and be capable of withstanding the environmental tests and cleaning procedures specified for the item to which it is affixed."

**For over 30 years, Camcode® bar code labels have stood for performance, long life, and high readability.** Camcode's UID nameplate and label materials, including Metalphoto® anodized aluminum, are the most widely specified for DOD applications in the world. Below are the material choices available through our order on-line standard products. If your application requires a different product, or if you just need help, please call us at 1-800-627-3917. Camcode can custom design the right UID label for your application

**Metalphoto®** is a time tested photographic process, which seals all graphics within the anodic layer of the aluminum. Metalphoto performs better than other label choices in the most demanding applications with the exception of highly caustic or highly acidic environments.

**.003" Metalphoto Foil** is our most popular UID label material. Foil has excellent resistance to scuffing, cleaning solvents, most chemicals, and heat. Service temperature range is -40°F to +450°F. Outdoor exposure is up to 20 years. Foil easily conforms to a variety of surfaces including radius surfaces. Foil also fractures if removed from its mating surface, providing a tamper-evident feature. The face stock is .003" anodized aluminum. The application adhesive is a .005", 3M, 350 Series adhesive with excellent solvent resistance and adhesion to metal, LSE and HSE plastics. Minimum application temperature is +50°F.

**.020" Rigid Metalphoto** has excellent resistance to scuffing, cleaning solvents, most chemicals, and heat. Outdoor exposure is up to 20 years. The .020" thickness improves impact resistance and allows holes for mechanical attachment. Service temperature range with holes is -50°F to +650°F. Service temperature range with adhesive is -40°F to +450°F. The application adhesive is a .005", 3M, 350 Series adhesive with excellent solvent resistance and adhesion to metal, LSE and HSE plastics. Minimum application temperature is +50°F.

**Premium Polyester Plus** works well in less demanding applications. The face stock is .002" white polyester overlaminated with a .001" polyester film, and a .002" pressure sensitive application adhesive. This material has good resistance to household cleaners, mild acid, oil and water. Exterior life is up to two years. Service temperature range is -40°F to +302°F. Minimum application temperature is +50°F. The .002" application adhesive has high initial tack and high ultimate bond to a wide variety of rough and textured surfaces and low surface energy plastics.

**Destructible Vinyl Labels** are for indoor assets only, when a high level of security is needed. This material is made to fracture if tampered with. This product has a low to moderate resistance to heat, scuffing and chemicals. Service range is -40°F to +176°F. Minimum application temperature is +50°F. Storage stability is up to two years stored at +70°F. Face stock is a 2.0 mil vinyl laminated to a 1.0 mil pressure sensitive adhesive.

## metalphoto® Performance Characteristics

Characteristic	Result
Abrasion Resistance	No pronounced image loss, degradation, or reduced readability after 7000 cycles of 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 650°F.
Salt Spray Corrosion	No deleterious effect after a 720-hour 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-hour carbon arc weatherometer exposure.
Accelerated Oxygen Aging	No discoloration or fading after 96hour/300 psi/70°C oxygen 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 (MIL-C-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-hour 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.

Note: Performance specifications are written to help define typical labels performance. The best evaluation will result by testing the product in the specific environment anticipated. Camcode does not warrant performance of its materials in any environment.

## UID

### DoD

Mil-Std-130N  
GG-P-455B  
Mil-A-8625F  
Mil-DTL-15024  
SPEC 2000  
Lockheed Martin LMA-PN010

## Industry Specifications & Studies

### BF Goodrich Aerospace

Data Systems Division  
Specification SMT0022

### Boeing Commercial Aircraft Company

Boeing Process Specification BAC5875  
Fabrication of Aluminum Markers, Instrument  
Panels, Drawer Front Panels and Fabrication of  
Metal and Plastic Appliques

### Honeywell, Inc.

Satellite Systems Operations  
Metalphoto approved for use on Space Station  
Memorandum A3-J024-M-9501786  
Laboratory Case 161311

### Norwegian Marine Technology

Research Institute (Marintek)  
Corrosion test of anodized aluminum plates  
23.1011.00.0391

### SAE Technical Paper Series 2000-01-2437

Special requirements for Crew Interface Labels  
on the International Space Station  
Stephen Gray & Fernando Ramos - Boeing

## UL & CSA

### Canadian Standard Association (CSA)

File 111331, Class 7921

### Underwriter Laboratories

Marking and Labeling Systems PGDQ2  
Marking and Labeling System Material  
Component PGGU2.MH26206

## U.S. Government Specifications & Studies

### Department of Defense

Commercial Item Description  
A-A-50271 Class 2- Composition C

### Department of Defense

MIL-A-8625F  
Anodic Coatings for Aluminum & Aluminum  
Alloys  
Type II Class 1 (unprocessed or clear)  
Class 2 (processed)

### Departments of Defense

MIL-STD-13231  
Standard Practice  
Marking of Electronic Items

### Department of Defense

MIL-DTL-15024F  
Identification of Equipment  
Type G - Foil - Type H - Plate

### Department of Defense

MIL-STD-130L  
Identification Marking of U.S. Military Property

### Department of Defense

MIL-P-19834B  
General Specification for Plates  
Identification or Instruction, Metal Foil,  
Adhesive Backed

### Department of Navy

Laboratory evaluation of label plate materials  
and attachment methods considered for use on  
LPD-17  
CARDIVNSWC-TR-62-00-05 June 2000

### NASA, Johnson Space Center Texas

Space Station Inventory Label Specification -  
SSP 50007

### United State Federal Government

Federal Specification GGP-455B(3)  
Type I (Grade A&B) Class 1 or 2