

ALSET®

■ Characteristics

1. An excellent material for deep drawing.
 - In case of Al, Maximum L/D=3.0~5.0 is possible
2. Possesses strong adhesiveness because of special adhesion method. It makes a metallic material suitable for deep drawing and DI (Drawing & Ironing) molding.
3. Possible to coloring, dyeing and printing of plastic portion.
4. Conforms to fire retardance standard UL-94V-0 by selecting plastic film and metal sheet.
5. Possible to eliminate the secondary fabrication (hand application of film, plating or coating) for the parts made by pressing.
6. Possible to replace thin wall injection molded parts by selecting thin plastic film and metal sheet.

■ Applications

1. for LCD
 - Bezel (flame)
 - Reflector
 - Reflection Plate
2. Aluminum Capacitor
3. Shielded case for insulation and electromagnetic wave
4. PC Peripherals
 - HDD Top Cover
 - CD-ROM pickup Cover
5. Others
 - Electronic Capacitor Microphone (for mobile telephone)
 - CD guide arm

■ Specifications

Customers have choice of plastic film and metal sheet layers meeting the customer's requirement.

● Representative specification of ALSET

Grade	Plastic layer	Metal sheet layer
ALSET Y	Nylon (long term heat resistant)	Type 1000 Aluminum
ALSET H	Nylon	Type 5000 Aluminum
ALSET U	Nylon	Stainless steel sheet
ALSET I	Nylon	Galvanized steel sheet
ALSET T	Nylon	Chromium plated steel sheet (TFS)

●Metal sheet layer

Description of metal	Thickness (mm)
AL 1000, 3000, 5000 types	0.2~0.8
SUS 304, 430, spring steel, etc.	0.05~0.6
Galvanized steel sheet	0.4~1.0
Chromium plated steel sheet (TFS)	0.2~0.3
Brass sheet	0.2~0.8

* Other metals may be provided upon consultation.

●Plastic film layer

Description of film	Thickness(um)
Nylon film (long term heat resistance)	20
Nylon film (general use)	20, 50, 100
Polypropylene	20
PET	15 (20, 30)
Reflective PET (White)	75, 188
Fluoride (FEP)	25 (12.5)

* Other films may be provided upon consultation.

• Order lot shall be 600 kg or more for coil material.

Specifications of Special metals and films may be provided upon consultation.

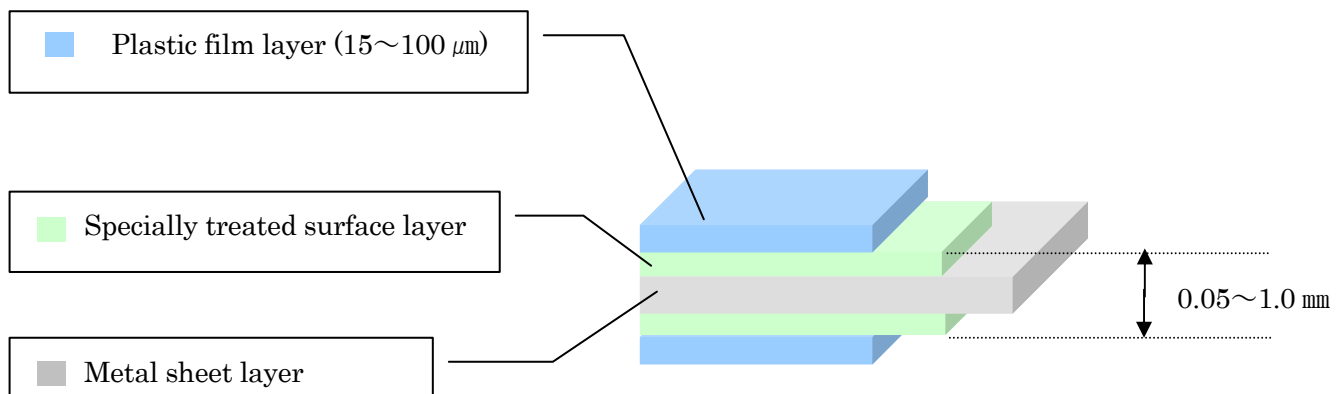
• The maximum width shall be 700 mm. (Please consult with us as the maximum width differ depending on grade.

• Normal delivery lead time is 30 days. (If metal sheet have to be obtained by us, three months may be necessary.

●Grades and Application Examples

SUS 430 + Nylon 20 μm	LCD Frame Application
AL 1000 + Nylon 20 μm	Capacitor casing
AL 5000 + Nylon 50 μm Black	HDD Top Cover
Chromium Plated Steel (TFS) + Nylon 50 μm Black	CD-ROM Pickup Cover
AL Alloy + Nylon + Polyolefin	Aerosol Valve

■Structure



4. Physical properties

●Mechanical properties

Grade \ Testing items	Strength at break (N/mm ²)	Elongation at break (%)	Hardness (Al side)
ALSET Y	80~100	35~45	20~30
ALSET H	240~260	20~30	60~80
Testing method	JIS Z-2201 JIS Z-2241	JIS Z-2201 JIS Z-2241	Micro Vickers Hardness (load 50g)

*The above data indicates representative properties but not guarantee value for the standard.

● Chemical and solvent resistance (Nylon, PP and PET)

Chemical, solvent	6 Nylon	Polypropylene	Fluoro film	PET film
Lubricant, animal/vegetable oil, grease, gasoline	◎	◎~○	—	◎ (Animal oil)
Hydro carbons	○	△ (○:low conc. solvent only)	△	○
Alcohols		◎~○	◎	◎~○
Ketones	○	△ (×:over 60°C)	○	△ (×:over 60°C)
Ethers	○	○~△	○	○ (×:over 60°C)
Esters	○			◎
Chlorinated hydro carbons (1,1,1-trichloro ethane)	○	△	△	△
Cosmetics, aerosol, paints, lacquer, food contain animal oil	○	—	—	—
Brine	○	◎	◎	◎
Alkaline solution	◎	◎	◎	◎:salts ○~×:basic
Strong acid (hydrochloric, sulfuric, nitric, formic, phosphoric, chromic)	×	◎ ⁽¹⁾	◎	◎ ⁽¹⁾
Fatty acids	○		—	○
Phenols, Highly halogenated acetic acids, metallic salt solutions (CaCl ₂ /methanol solution)	×	○ (phenol)	○ (phenol)	×
Potassium permanganate, conc. chlorine water	×	—	◎	◎
Glycols, cyclic, ketones, sulfonamide	△ (×:at high temp)	—	—	—

The above data is for reference only and may vary depending on the use conditions (temperature, duration, load, etc.) and shall be verified before use.

(1) Except concentrated Hydrochloric Acid, Nitric Acid and Sulfuric Acid.

■ Important Safeguards

Directions for safe use are prepared for the purpose of maintaining the safety of customers and your clients and property. The products carrying warning and caution, please read following details.



If this product is mishandled in defiance of this sign, you may have a risk of death or serious injury.

- Absolutely do not implant, insert in the body.
- Never use for any applications for which the material will be left in the body.
- In case of using for medical devices, foodstuff, other special purpose applications, please test and make certain that you can do so safely.



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