Ten Labels to Solve Your Engineering Challenges

Put the right one on

There's a right label and a wrong label for an application. How do you choose the ideal one for the job? First, you'll want to ask yourself several questions. Will your application face harsh environments, high or low temperatures, chemicals or abrasion? Will the label need to be a certain color, adhere to a particular substrate or be matte or glossy?

Labels come in hundreds of different compositions. Whether you're looking for barcode labels, electrostatic dissipative labels, equipment identification labels, rating plates labels, circuit board labels or identification labels—you'll want to be smart about how you choose. The wrong label could cause you to lose business, create a safety hazard, waste your time with replacing them or worse—lose the product all together because the label has been damaged or gone missing.

Know your parts

Labels consist of four essential parts—text, topcoat, film and adhesive. Each can improve your labelling outcomes when structured properly for your application.

Label Outcomes – Wrong choices vs. right choices

Label Parts	Wrong choices	Right choices
Text	Text face smears, fades or becomes unreadable	• Text ink formulated to be durable • Protective coating protects
Topcoat	Topcoat peels off the film; leaves text and label surface unprotected	• Topcoat chosen to withstand specific application environment
Film	Face film shrinks or discolors when exposed to high heat	• Film chosen to be durable and align with application
Adhesive	Label lifts, falls off or moves around; incorrect adhesive capabilities	• Proper adhesive choice suits application - rubber, acrylic, permanent, removable

Labeling challenges meet their labeling solutions

The composition of the four characteristics listed above and their capabilities will determine the type of label you need. Below you'll see ten engineering application challenges, along with the attributes necessary to conquer them and the right labeling solution for the problem.

Ten application labeling challenges and solutions

	The Application Challenge	Attributes	Solution
1.	• Wave solder environments for circuit boards and electrical component pre-process labeling • Extreme wash protocol and cleaning chemicals • Auto apply equipment	Abrasion, high heat and low temperature resistant	Polyimide material

2.	• Component identification • Bar code labels and rating plates • Use on glass, thermoset polyester plastic • and polyvinyl fluoride plastic surfaces	Abrasion, high heat, fuel/oil and low temperature resistant	Polyester material
3.	• Rating and serial plates • Durable and quality identification • Versatility in using characters, graphics and barcodes	Solvent/chemical, fuel/oil and low temperature resistant	Metalized polyester
4.	• Requires excellent solvent resistance and print performance	Abrasion, high heat and low temperature resistant	Polypropylene material
5.	• ID lab vials, centrifuge tubes, test tubes, straws • Frozen surfaces, including glass • Polypropylene stored in liquid nitrogen	Solvent, high heat, and low temperature resistant	Polyester material
6.	• Nameplate identification, asset tracking, general purpose labeling • Surfaces constantly exposed to outdoors	Outdoor durability, high heat and low temperature resistant	Weather resistant material
7.	• Durable labels, nameplates, schematics, control panels • Harsh operating environments	Outdoor durability; abrasion, solvent and high heat resistant	Photosensitive anodized aluminum
8.	• Instant visual indication of heat exposure • Components, industrial and household applications (electric pumps, rotating equipment, brakes, refrigerators) • In cold chains, hot spaces areas • Where temperature measuring difficult or impractical	High heat and reversible temperature indicator	Reversible temperature indicating
9.	• Permanent color, durable against abrasion, harsh fluids • Use on regulatory, compliance, electrical components • Finished goods, automotive/passenger compartment • ID and asset tracking	Outdoor durability, low temperature and high heat resistant	Durable polyester

10.	• Use to ID external push-buttons, switches, internal connection points • Requires name plate quality for rating, serial plates	Abrasion, fuel/oil, high heat resistant, outdoor durability	Polyester material

Article based on an original publication by Brady.