

# Materials & Conversions

Toggles  
 Rockers  
 Pushbuttons  
 Illuminated PB  
 Programmable  
 Keylocks  
 Rotaries  
 Slides  
 Tactiles  
 Tilt  
 Touch  
 Indicators  
 Accessories  
 Supplement

## PLASTICS

Specific Name	Acronym or Abbreviation	Generic Name
Acrylonitrile butadiene styrene	ABS	Shatterproof thermoplastic composed of styrene and acrylic resin; ABS provides resilience, shiny appearance, and stable base for metal plating
Carbon blended polyamide		Polyamide blended with carbon for antistatic property
Carbon composite polyacetal		Polyacetal
Diallyl phthalate	DAP	Diallyl phthalate; a thermosetting resin
Ethylene Propylene Terpolymer	EPT	Ozone resistant plastic
Glass fiber reinforced diallyl phthalate	GFR DAP	Diallyl phthalate
Glass fiber reinforced polyamide	GFR PA	Polyamide
Glass fiber reinforced polybutylene terephthalate	GFR PBT	Polyester
Liquid crystal polymer	LCP	Liquid crystal polymer
Nitrile butadiene rubber	NBR	NBR; mainly used where oil-proof is required
Phenolic resin		Phenol plus aldehydes; used extensively as thermosetting plastic
Polyacetal		Polyacetal
Polyamide	PA	Nylon 6/6; Polyamide; always a nylon resin
Polybutylene terephthalate	PBT	Polyester
Polycarbonate	PC	Lexan; Polycarbonate; damaged by trichloroethylene solvent and so changes to polyamide
Polyethylene	PE	Polyethylene
Polyphenylene sulfide	PPS	Polyphenylene sulfide
Polyoxymethylene	POM	Polyoxymethylene
Polypropylene	PP	Polypropylene; more elastic than polycarbonate
Polyvinyl chloride	PVC	Polyvinyl chloride; loses pliability below 0°C (32°F)
Resin		Polymer
Silicone		Silicone

## ELEMENTS

<b>Ag</b>	silver	<b>Cr</b>	chromium	<b>Pb</b>	lead
<b>Al</b>	aluminum	<b>Cu</b>	copper	<b>Sn</b>	tin
<b>Au</b>	gold	<b>Ni</b>	nickel	<b>Zn</b>	zinc

## TEMPERATURE

		°C	°F	°C	°F
<b>Fahrenheit</b> Thermometric scale with fixed points marked 32°F for freezing point and 212°F for boiling of water.	$(\text{Fahrenheit} - 32) \times .555 = \text{Celsius}$	-40	-40	0	+32
		-30	-22	+50	+122
<b>Celsius</b> International thermometric scale with fixed points marked 0°C for freezing point and 100°C for boiling of water.	$(\text{Celsius} \times 1.8) + 32 = \text{Fahrenheit}$	-25	-13	+55	+131
		-20	-4	+70	+158
		-10	+14	+85	+185
				+100	+212

## LINEAR DIMENSIONS

	Fraction	Inch	Millimeter	Fraction	Inch	Millimeter
<b>Formulas for Conversion</b>		.100	2.54		.394	10.0
millimeter x .03937 = inch		.150	3.81	15/32	.469	11.9
inch x 25.4 = millimeter		.197	5.0		.472	12.0
		.236	6.0	1/2	.500	12.7
	1/4	.250	6.35			

## FORCE

### Formulas for Conversions

ounce•force	x	.2780139	=	newton
pound-force	x	4.4482220	=	newton
kilogram-force	x	9.8066500	=	newton
newton	x	.1019716	=	kilogram-force
newton	x	.2248089	=	pound-force
newton	x	3.5969420	=	ounce•force

## TORQUE

### Formulas for Conversions

kg/cm	x	2.2046	x	.3937	=	lb/in
newton•meter	x	.7375621	=	pound-foot		
newton•meter	x	.1019716	=	kilogram-meter		
newton•meter	x	141.6119	=	ounce-inch		
newton•meter	x	8.8507	=	pound-inch		
pound-foot	x	1.355818	=	newton•meter		

## PLATING THICKNESS

<b>Micron</b>	1 micron = 1 thousandth of 1 millimeter
One millionth of a meter; a micrometer	1 micron ÷ .0254 = 39.37 millionths of an inch
	Example: 3 microns ÷ .0254 = 118.11 millionths of an inch

## WEIGHT

1 gram = .03527 ounce	1 ounce = 31.10348 grams
1 kilogram = 35.27 ounces	1 ounce = .03110348 kilogram
1 kilogram = 2.2 pounds	1 pound = .4539 kilogram