

Material comparison – Automotive & Industrial

Focus: Series and structural components for automotive and industrial applications.

Qualitative evaluation from the perspective of design, process reliability, and service life (● low | ●● medium | ●●● high).

Automotive labeling:

- **I – Interior** (appearance, surface feel, dimensional accuracy)
- **A – Exterior** (UV, weather, and chemical resistance)
- **M – engine related compartment** (high thermal & chemical stress)

Material comparison – Automotive & Industrial (Overview)

Submatrix 1 – Mechanics, temperature, and area of application

Plastic	Mechanical strength	Continuous temperature	Temperature resistance	Automotive sector
ABS	●●	≤ 80 °C	●	I
ASA	●●	≤ 90 °C	●	A
PP	●	≤ 90 °C	●	I / A
POM	●●●	≤ 110 °C	●●	I / M
PMMA	●	≤ 80 °C	●	I / A
PC	●●●	≤ 120 °C	●●	I
PBT	●●	≤ 140 °C	●●	I / M
PA6	●●	≤ 120 °C	●●	I / M
PA6	●●●	≤ 160 °C	●●●	M
GF15/30				
PA6.6 GF30	●●●	≤ 180 °C	●●●	M

Plastic	Mechanical strength	Continuous temperature	Temperature resistance	Automotive sector
ABS-PA / ASA-PA	●●●	≤ 110 °C	●●	I / A
TPE	●	≤ 100 °C	●	I
TPV	●●	≤ 140 °C	●●	M
PEEK	●●●	≤ 260 °C	●●●	M
PPS	●●●	≤ 220 °C	●●●	M
Regranulate	●-●●	≤ 80–120 °C	●-●●	I / A

Submatrix 2 – Durability, dimensional accuracy, and profitability

Plastic	Chemical resistance	UV/chemical resistance	Dimensional stability	Profitability	Typical applications
ABS	●	●	●●	●●●	Interior housing, covers
ASA	●●	●●●	●●	●●	Exterior components
PP	●●●	●	●	●●●	Clips, Serial components
POM	●●	●	●●●	●●	Gears, bearings
PMMA	●	●●●	●●	●	Light covers
PC	●●	●	●●	●●	Safety components
PBT	●●	●	●●●	●●	Connectors
PA6	●●	●	●●	●●	Structural parts
PA6	●●	●	●●●	●	Engine-related components
GF15/30					
PA6.6	●●●	●	●●●	●	Structural components
GF30					
ABS-PA / ASA-PA	●●	●●	●●	●	Multifunctional housings
TPE	●●	●	●	●●	Seals
TPV	●●●	●	●●	●	Sealing systems
PEEK	●●●	●●	●●●	●	High performance components
PPS	●●●	●	●●●	●	Engine-related electronics
Regranulate	●—●●	●	●—●●	●●●	Sustainable series parts