〔TECHNICAL DATA〕

ABBREVIATIONS FOR VARIOUS PLASTIC MATERIALS

■ List of Abbreviations for Plastic Materials

In alphabetical order

Abbreviations	Resins
ABS	Acrylonitrile–butadiene–styrene
AS	Styrene–acrylonitrile ※SAN in ISO
CA	Cellulose acetate
CAB	Cellulose acetate butyrate
CF	Cresol–formaldehyde
CMC	Carboxymethyl celluloss
CN	Cellulose nitrate
CS	Casein
EC	Ethyl cellulose
EP	Epoxide; epoxy
EVA	Ethylene vinylalcohol
LCP	Liquid Crystal Polymer
MF	Melamine–formaldehyde
PA	Polyamide
PBTP	Poly butyrene terephthalate ※Also PBT
PC	Polycarbonate
PCTFE	Polychlorotriflu oroethylene
PDAP	Poly diallyl phthalate ※Also PDA
PE	Polyethylene
HDPE	High density Polyethylene
MDPE	Medium density Polyethylene
LDPE	Low density Polyethylene
PETP	Polyethylene terephthalate ※Also PET
PF	Phenol–formaldehyde
PI	Polyimide
PIB	Polyisobutylene
PMMA	Polymethyl methacrylate
POM	Polyoxymethylene Polyformaldehyde
PP	Polypropylene
PPO	Polyphenylene-oxide
PPS	Polyphenylene-sulfide
PS	Polystyrene
(HIPS	High impact proof Polystyrene
PTFE	Polytetrafluoroethylene
PUR	Polyurethane
PVAC	Polyvinyl acetate
PVAL	Polyvinyl alcohol
PVB	Polyvinyl butyral
PVC	Polyvinyl chloride
PVCA	Polyvinyl chloride acetate
PVDC	Polyvinylindene chloride
PVF	Polyvinyl fluoride
PVFM	Polyvinyl formal
SB	Styrene–butadiene
SI	Silicone
TPE	Thermoplastic elastomer
UF	Urea–formaldehyde
UP	Unsaturated polyester

■ Reference

Codes	Meaning
FRP	Fiber reinforced plastic
GRP	Glass fiber reinforced plastic
BRP	Boron fiber reinforced plastic
CRP	Carbon fiber reinforced plastic
FRTP	Fiber reinforced thermoplastic
GRTP	Glass fiber reinforced thermoplastic
CRTP	Carbon fiber reinforced thermoplastic

〔TECHNICAL DATA〕

TYPICAL MOLDING PROBLEMS AND POSSIBLE CAUSES

Condition \ Cause	Molding machine	Mold	Material
Filling miss	(1) Low material temperature (2) Low injection pressure (3) Material feed shortage (4) Too small nozzle hole diameter (5) Cylinder nozzle clogging	(1) Small gate or runner (2) Inadequate gate position (3) Inadequate position of or no air vent (4) Low mold temperature (5) Cold slag clogging in runner or gate	(1) Low fluidity (2) Low lubricity
Fin	(1) Weak clamping force (2) High injection pressure (3) Material overfeed (4) High material temperature	(1) Flaw or a foreign body on parting plane (2) Wide project area to the machine (3) High mold temperature	(1) Excessive fluidity
Shrinkage cavity	(1) Low injection pressure (2) Slow injection (3) High material temperature (4) Short pressure retaining (5) Material feed shortage	(1) High mold temperature (2) Products thickness uneven (3) Small gate (4) Cooling time shortage (5) Inadequate ejection	(1) Material, too supple (2) High contraction coefficient
Weld line	(1) Low material temperature (2) Low injection pressure (3) Slow injection	(1) Small gate or runner (2) Low mold temperature (3) Inadequate gate position (4) Inadequate air vent	(1) Rapid curring (2) Insufficient drying (3) Low lubricity
No good luster／haze	(1) Nozzle clogging or small diameter (2) Material feed shortage	(1) Inadequate air vent (2) Small gate or runner (3) Insufficient measures for corrosion (4) Excessive mold release agent	(1) Insufficient drying (2) High volatility (3) A foreign body mixed
Flow mark	(1) Low material temperature (2) Low injection pressure (3) Slow injection (4) Too small nozzle diameter	(1) Low mold temperature (2) Products thickness uneven (3) Small gate or runner (4) Small or no slag well	(1) Low fluidity (2) Low lubricity
Silver streak／bubble	(1) Fast injection (2) Low injection pressure (3) Small injection capacity (4) Short pressure retaining (5) High material temperature	(1) Inadequate air vent (2) Small gate or runner (3) Products thickness uneven (4) Small or no slag well	(1) Insufficient drying (2) High volatility
Black streak／burned	(1) High material temperature (2) Long stay inside cylinder (3) Flaw inside cylinder	(1) Inadequate position of or no air vent (2) Small slag well (3) Oil or something inside cavity	(1) Excessive lubricant (2) Insufficient drying
Bad release of sprue or products	(1) High injection pressure (2) Material overfeed	(1) Dislocations of nozzle hole and sprue hole (2) High mold temperature (3) Low sprue gradient (4) Undercut on or low gradient of cavity	(1) Insufficient lubricant
Warpage／deformation	(1) High injection pressure (2) Long pressure retaining (3) Insufficient annealing	(1) No good ejection mechanism (2) High mold temperature (3) Big gate (4) Uneven cooling	(1) Low fluidity (2) High contraction coefficient (3) Low material rigidity