

● Common defects when injection molding & countermeasures

Appearance	Cause	Countermeasures
Bubbles caused by water content	<ul style="list-style-type: none"> Decomposition by insufficient drying of pellets 	<ul style="list-style-type: none"> Sufficient predrying Maintain temperature of hopper
Weld mark	<ul style="list-style-type: none"> Unsuitable cylinder temperature Insufficient injection pressure Unsuitable mold temperature No venting in the cavity 	<ul style="list-style-type: none"> Raise cylinder temperature Increase injection pressure Raise mold temperature Include venting
Sink mark	<ul style="list-style-type: none"> Caused by shrinkage from slow cooling surface of thick wall section (unsuitable wall thickness) Insufficient injection pressure Insufficient shot capacity Mold temperature is too high or insufficient cooling Insufficient pressure maintained Insufficient gate dimension 	<ul style="list-style-type: none"> Reduce thickness deviation Increase injection pressure Increase shot capacity Increase cooling time if mold temperature is suitable Extend pressure holding time Increase gate dimension, especially thickness
Burning (whole or partial discoloration)	<ul style="list-style-type: none"> Unsuitable cylinder temperature Partial retention occurs in the cylinder Seepage into the screw joint between cylinder and nozzle or other parts In case of using check valve and ring Decomposition by insufficient drying of pellets Excessive capacity of molding machine 	<ul style="list-style-type: none"> Lower the cylinder temperature Eliminate dead corners Eliminate gap around screw joint Eliminate the material retention Perform predrying as recommended Change to a suitable capacity machine
Silver streak	<ul style="list-style-type: none"> Unsuitable cylinder temperature Long retention time Unsuitable injection speed Unsuitable gate dimension Insufficient pellet drying Unsuitable injection pressure 	<ul style="list-style-type: none"> Lower the cylinder temperature Eliminate retention Slow injection speed Enlarge the gate size Perform predrying as recommended Reduce injection pressure
Wave around gate (devitrifying)	<ul style="list-style-type: none"> Unsuitable injection speed Unsuitable pressure holding time Unsuitable mold temperature Unsuitable gate dimension 	<ul style="list-style-type: none"> Slow injection speed Shorten pressure holding time to avoid the presence of molten materials in the cavity after filling Raise mold temperature Enlarge the gate size
Jetting and flow marks	<ul style="list-style-type: none"> Unsuitable mold temperature Unsuitable injection pressure Unsuitable gate dimension 	<ul style="list-style-type: none"> Raise temperature Reduce injection pressure Enlarge the gate size
Ejection problems (defective mold release)	<ul style="list-style-type: none"> Insufficient taper in core and cavity Unsuitable cycle Unsuitable cylinder temperature Unsuitable position and number of knock pins Vacuum with molded products in mold release from core Unsuitable mold temperature Injection pressure is too high and filling capacity is too large 	<ul style="list-style-type: none"> Add release taper Cooling time is too short or extremely long Lower molding temperature to reasonable value Examine reasonable position and number Often occurs when the surface of the core is smooth. Eject with plate, not with pin, and add vent pin. Lower the mold temperature and lengthen the cycle Reduce injection pressure and reduce weight of raw materials
Brittleness of molded products	<ul style="list-style-type: none"> Insufficient drying Mold temperature is too low, injection pressure and pressure holding are excessive Occurrence of inside stress caused by thickness deviation and defective mold release Notch effect Heat decomposition Contamination by foreign material 	<ul style="list-style-type: none"> Maintenance of drying machine and hopper Select suitable conditions Eliminate thickness deviation Eliminate sharp corners, Modify gate position Lower cylinder temperature Eliminate the material retention Cleaning of hopper and cylinder