

MAGNESIUM THIXOMOLDING > FROM MOLEX

The demand for durable, lightweight products continues to drive the significant growth of magnesium thixomolding. Its many advantages make it a proper choice for manufacturing parts found in automotive, consumer products, defense, electronics, hand-held devices and sports equipment.

INTRODUCTION

Advantages of Magnesium Thixomolding

Magnesium thixomolding produces thinner, lighter and stronger parts than are possible with engineered plastics and die casting. This process also offers numerous advantages over other production methods including higher product yield, increased die life and lower utility cost.

Additional advantages of magnesium:

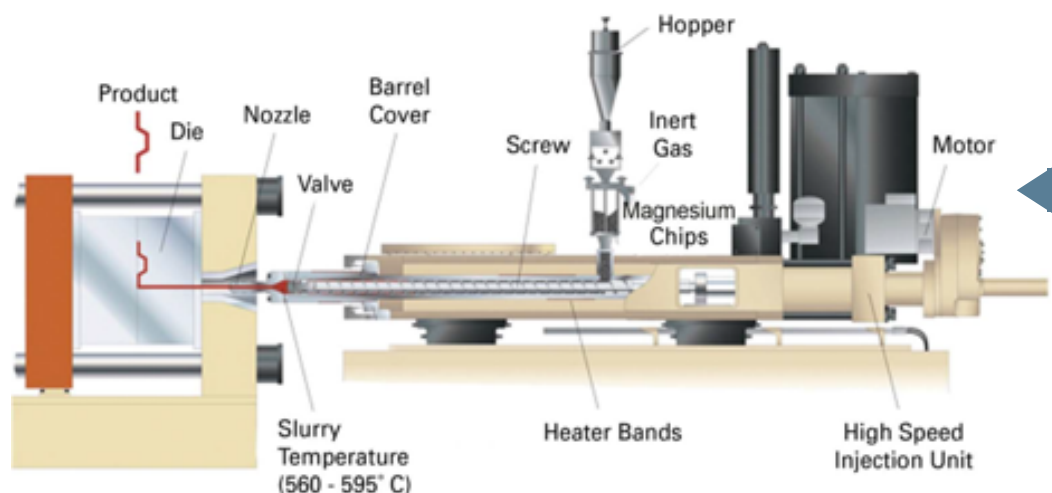
- High strength-to-weight ratio
- Good machinability
- Good heat-transfer characteristics
- Higher temperature applications than plastic

THE PROCESS

- 1** Magnesium chips are fed into a heated barrel containing argon to prevent oxidation.
- 2** The magnesium is heated (approximately 560 to 630°C), creating a thixotropic slurry.
- 3** Within the barrel, a rotating screw propels the material forward.
- 4** The slurry is forced into a preheated metal mold to produce a net or near-net shape part.

THIXOMOLDING PROCESS

The thixomolding process provides a worker- and environment-friendly atmosphere and can easily integrate into automated manufacturing processes to produce metal and metal/plastic assemblies.



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Thixomolding Versus Die Casting

Lower porosity

More favorable parts for
maintaining air pressure

Tighter tolerances
(NADCA Precision Tolerances)

Parts with fewer draft features

Generally longer tool life

Product yields at 90%
(compared with die casting's 50%
product yields)

Internal Secondary Capabilities

Overmolding
Form in place gasketing
Machining
Deburring
Hand finishing
Assembly

Additional Capabilities

Proto typing
Conversion coating
E-Coat
Wet paint
Dry powder finish
Plating

APPLICATIONS

At Molex, our Phillips-Medsize Magnesium Injection Molding is the premier thixomolding supplier in North America. We provide seamless and expedited development from initial consultation to product manufacturing, producing quality designs across a variety of industries and applications.

Automotive

Structural automotive components
Decorative automotive interiors
Drones/autonomous driving components

Consumer

Countertop appliances
Lawn and garden products
Power tools

Smartphones and Mobile Devices

Handheld electronic devices
Electronics housings
EMI/RFI shields

Electrical and Industrial

LED lighting housings
Robotics

Defense

Defense products

Data Center Solutions

Computer server components



MAG PARTS-SMALL



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THE MOLEX ADVANTAGE >

With more than 50 years of injection molding experience, Molex provides solutions reflective of our extensive capabilities in key molding technologies and processes. Through effective collaboration and applied expertise, we deliver superior products with maximum value to meet our customers' growing demands.

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www.molex.com/capabilities/magnesiumtm.html

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