550 N. STATE STREET
YORK, PA 17403 USA
Phone 717-848-2801
www.readco.com

Metal Injection Molding Material (MIM) Case Study

Application:

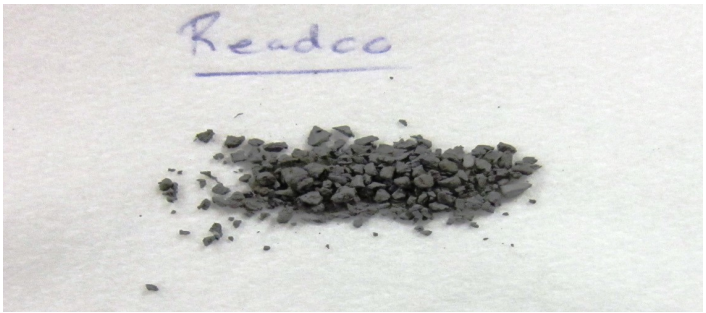
Utilize the Continuous Processor to **melt and mix a binder blend with metal powder** for metal injection molding applications for high-precision parts.

Challenge:

Melt the binders enough to be combined and evenly distributed throughout the metal powder to **achieve the proper product density** utilizing one mixing chamber.

Process Conditions:

Metal Powder	85%
Flake Binder	5%
Granule Binder	5%
Pellet Binder	5%
Jacket Temperature	400°F
Shaft Speed	150-300 rpm variable



Solution:

The Processor's **mixing chamber was heated** allowing the binders to change phase during the mixing cycle. Through heat transfer, and mechanical energy from the configured paddle arrangement, **the binders and metal powders were combined into a fully homogeneous product**.

Benefits:

The **proper arrangement of processing elements** provides the correct and necessary shear and conveyance to **both melt and mix** materials. The paddles can be configured to expedite melting upon entry into the mixing chamber before final mixing occurs further down the chamber.

Continuous Processor—CP

Features and Benefits:

Customized Paddle Arrangement

Shorter Cycle Time

Fewer Process Steps

Less Waste

Product Consistency