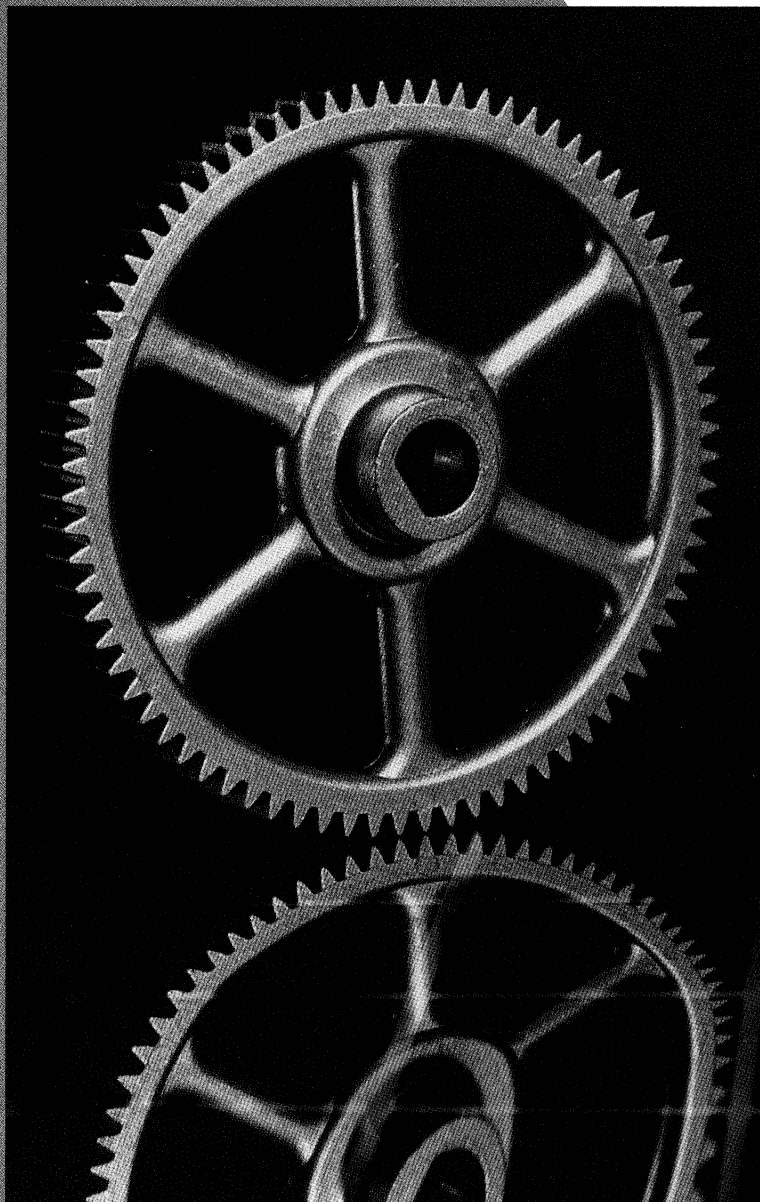


# ACuZinc<sup>®</sup>

**Improved Zinc Alloy for  
Die Casting Applications**



ACuZinc is a registered GM trademark.

Looking for a low-cost,  
high-performance die  
casting material?

Look no further than  
ACuZinc.

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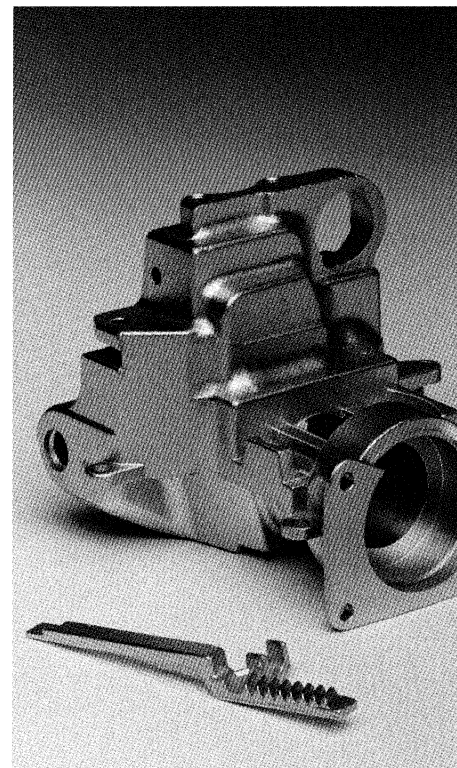
ACuZinc is a new, patented family of zinc die casting alloys offering significant cost and quality advantages compared to other zinc alloys. It is a low-cost alternative to more expensive materials for many structural applications.

Developed at the GM R&D Center, ACuZinc represents a major advance in zinc-based alloys. Parts made from ACuZinc have superior strength, wear, hardness, and creep properties, compared to die castings made from other commercial zinc alloys.

## SUPERIOR MATERIAL PROPERTIES

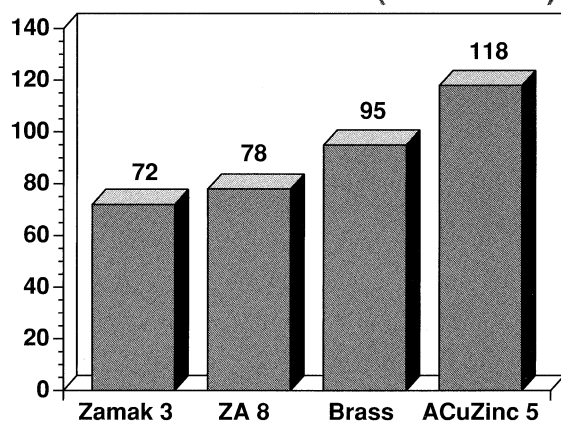
ACuZinc's superior properties include:

- Greater strength and hardness
- Better creep resistance
- Enhanced corrosion and damage resistance
- Higher service temperatures
- Improved bearing and wear characteristics
- Reduced porosity

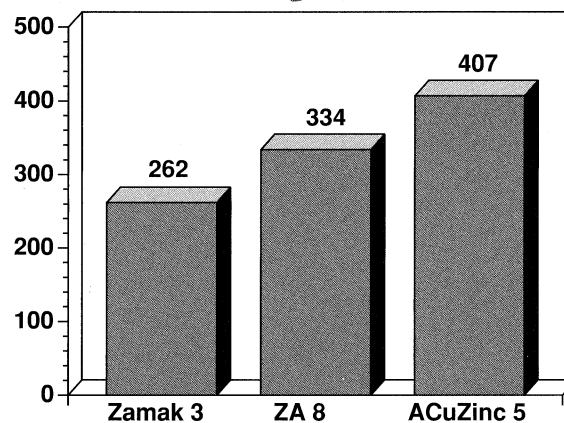


ACuZinc is suitable for many type

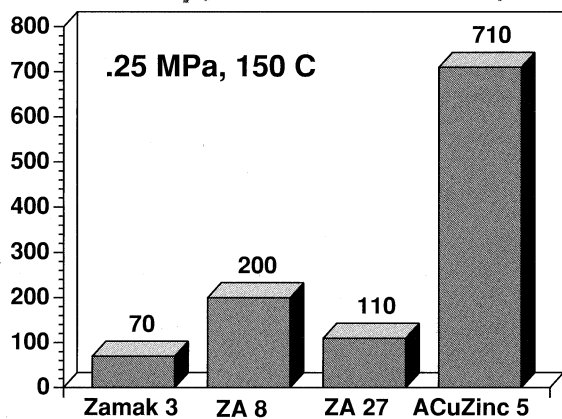
**Brinell Hardness (10-500-30)**



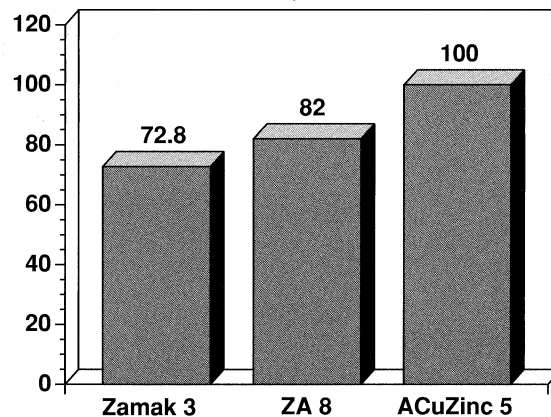
**Strength, MPa**

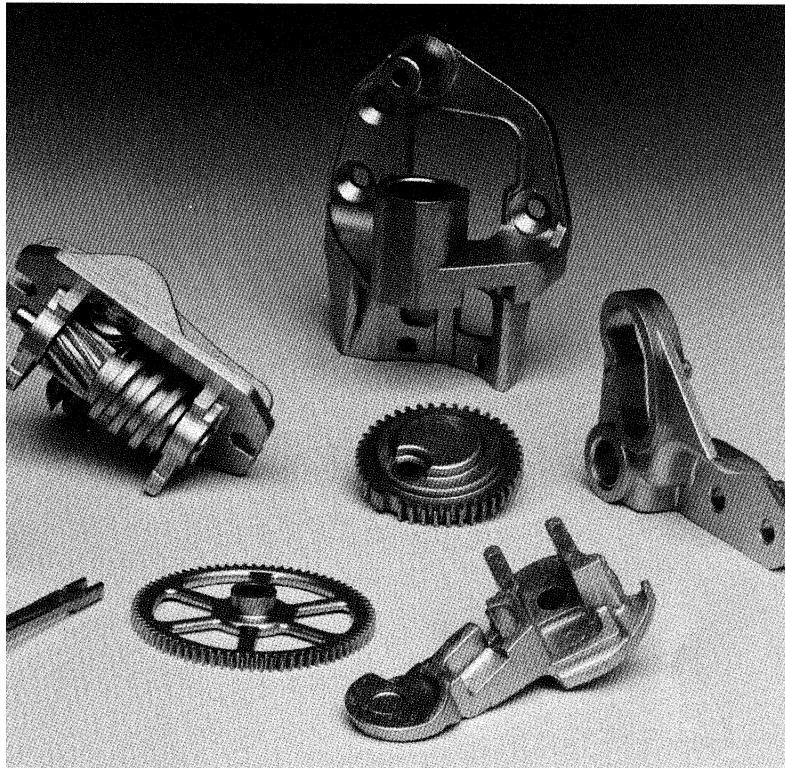


**Creep, Time to Fracture, h**



**Modulus, x1000 MPa**





Applications – gears, racks, cams, brackets.

- Dimensional reproducibility
- Parts consolidation
- Increased design flexibility
- Accepts standard finishes

#### **Environmental Advantages**

- Recyclable
- Less energy required to produce and recycle than iron or aluminum
- Minimal scrap

## **ACuZinc APPLICATIONS**

ACuZinc has been used by GM's Automotive Components Group to make steering components, distributor terminals, and seat components. To date, use of the material has enabled GM to realize millions of dollars in material and production cost savings.

## **NET-SHAPE DIE CASTINGS THROUGH DFM**

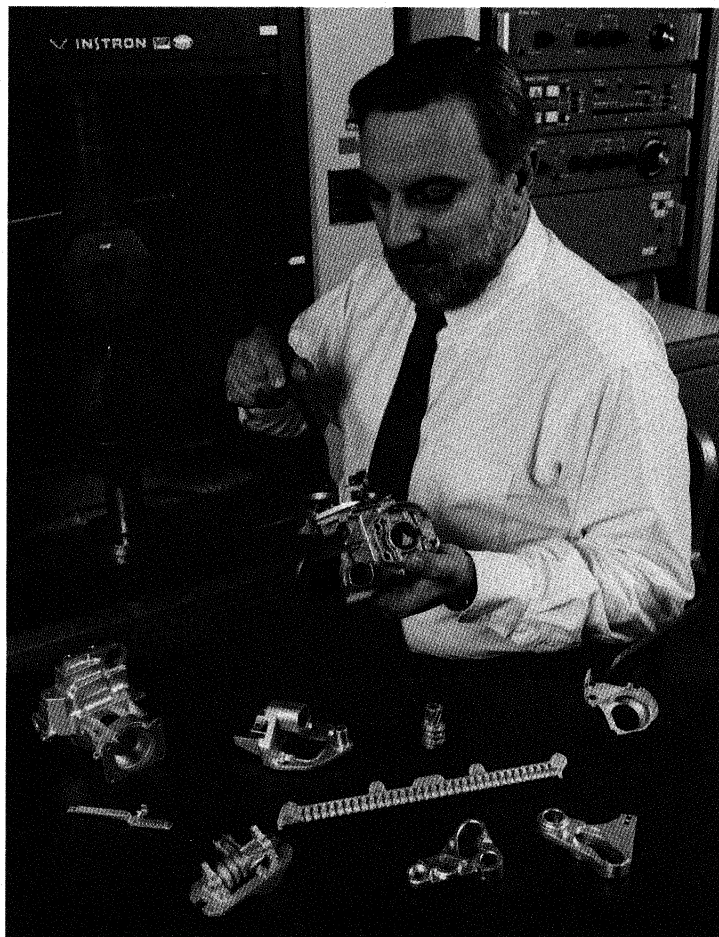
Because of its unique, patented formulation, ACuZinc extends zinc die casting into higher-performance, structural applications – without requiring modifications to current production machines.

With ACuZinc, parts can be made net shape to final dimensions at high production rates. This offers tremendous opportunities for the application of Design for Manufacturability concepts and parts consolidation – which can result in substantial cost savings.

Using ACuZinc in concert with DFM techniques yields:

#### **Manufacturing Advantages**

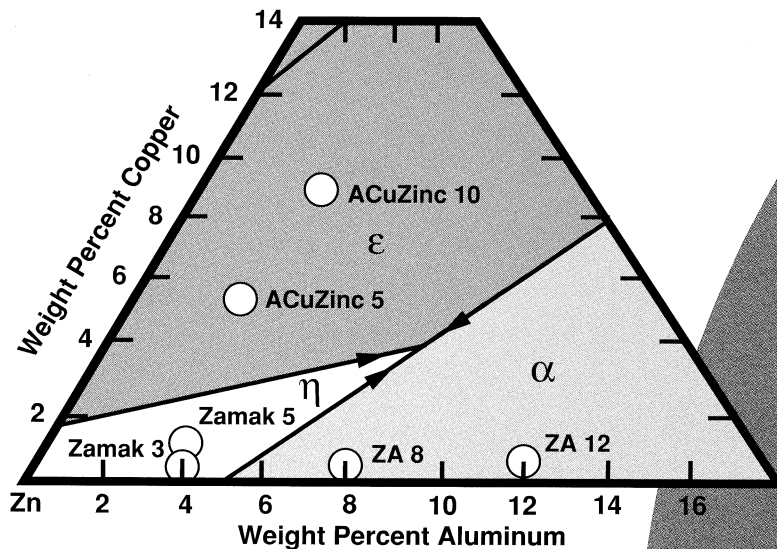
- Higher production rates
- Close tolerance; complex details
- Thin-wall castability





## ACuZinc PROCESSES

ACuZinc parts can be cast using the ACuZinc 5 alloy for the hot chamber die casting process or the ACuZinc 10 alloy for the cold chamber process. Both processes have been optimized to produce die castings with superior properties compared to other commercial zinc die casting alloys.



## ACCESS TO ACuZinc

The GM specification number for ACuZinc, which is now commercially available, is GM3913M. ACuZinc can also now be licensed for use by other business ventures requiring low-cost, high-performance die castings.

For more information on how ACuZinc can make your components – and your life – simpler and cheaper, contact:

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Prepared by the Learning Systems  
and Technical Communication Department