

# Molycast™ MC700

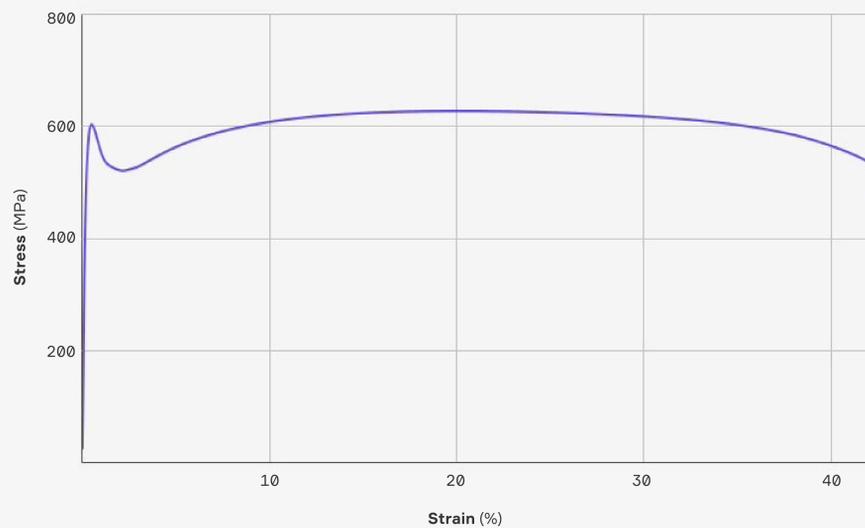
Molycast™ MC700 is an isotropic Molybdenum metal processed using Foundation Alloy’s proprietary MetalsFIRST™ technology. MC700 is sintered in an inert atmosphere to full density without hydrogen or high vacuum, **lowering both cost and lead time** while retaining an ultra-fine grained microstructure. This fully recrystallized material has best-in-class room temperature strength and ductility in the as-sintered state— and is **completely isotropic** — making it ideal for demanding applications requiring exceptional performance. MC700 can be processed into semi-finished stock, near-net shape parts, and end-use components with ongoing development for additive manufacturing.

To learn more about MC700, other upcoming materials, and to request samples, reach out to [sales@foundationalloy.com](mailto:sales@foundationalloy.com).

The following technical data are taken from tests conducted on a limited number of laboratory production runs. Test data is aggregated from multiple sample batches and is in the as-sintered state. All information and data should be considered representative or typical only and should not be used for specification purposes.

## Chemical Composition & Tensile Properties

Minimum yield strength of 600 MPa, with process-based strengthening up to 760 MPa

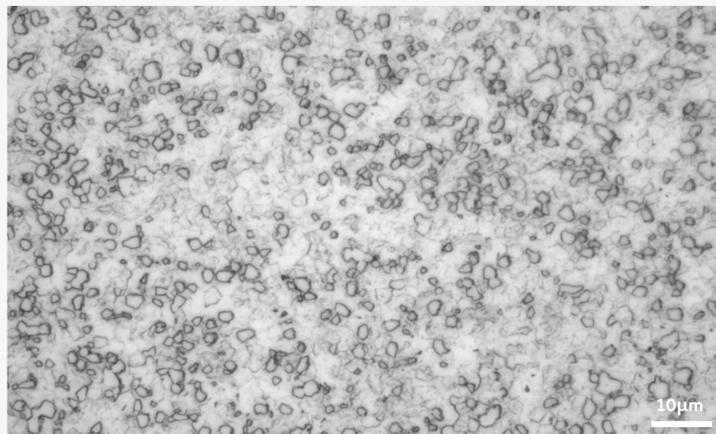


### Composition wt%

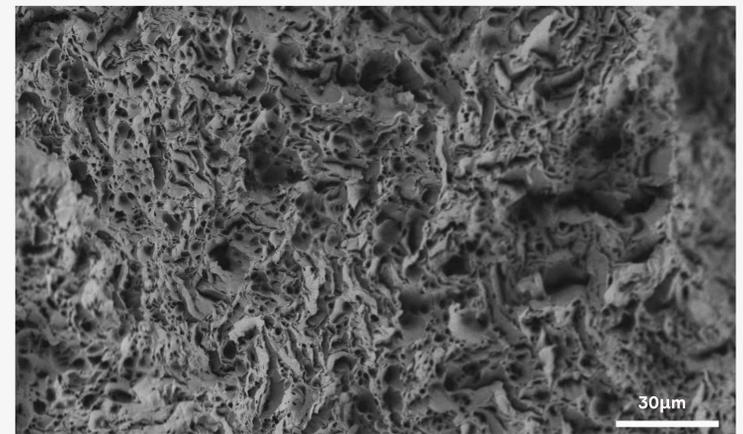
Element	Composition
Mo	Balance
C	>0.015%
O	<0.0075 %
N	<0.0015 %
Other	Trace

## Microstructure

100x smaller grain size than conventional alloys unlocks superplasticity in the as-sintered state



MC700 grain structure



MC700 fracture surface

## Properties & Applications

### Physical Properties

Relative Density	98 +%
Coefficient of Thermal Expansion	5.3 E-06 (1/°C at 25 °C)
Young's Modulus	300 GPa
Thermal Conductivity	140 W/(m*K)

### Potential Use Cases

- Complex thermal and electrical parts and systems
- Stiff and dimensionally accurate components
- High temperature, corrosive, and other extreme applications

## Elevated Temperature Properties

Temperature	Yield Strength	Ultimate Tensile Strength	Elongation	Hardness
25 °C	600 - 760 MPa	650 - 760 MPa	35 - 42 %	200 - 210 HV
500 °C	330 MPa	363 MPa	41 %	110 - 120 HV
750 °C	250 MPa	307 MPa	45 %	90 - 100 HV
1000 °C	201 MPa	208 MPa	49 %	-