

MINIMUM TEST SAMPLE SIZE "CHEAT SHEET"

Please note, QAI Laboratories performs all tests according to applicable standards and specifications. These charts are designed to serve as general guidelines for minimum sample size or weight. In most cases, we can work with larger sample sizes and in some instances, we can even work with smaller samples; so please feel free to contact us to discuss your specific testing requirements.

Metallography	Minimum Size
Microstructure	Test dependent – please contact us
Inclusion Rating	160mm square (0.25 in. square) per ASTM E45
Scanning Electron Microscopy (SEM)	N/A – Any size*

*SEM – Maximum sample size is 3" x 3" x 3" or 1.5 lbs. max weight.

Tensile Testing	Minimum Size
Flat Stock	7" x 1" x thickness (mark rolling direction)
Bar Stock	7" x 1" x thickness (mark rolling direction)
Bar Round Standard	7" length x 1" diameter
Bar Round (or Flat) Sub-size	3" min. length
Full Tube Standard	16" length x 1" diameter (pulled as received)
Wire	18" length

Charpy Testing*	Sample Size (after prep)
Standard	3" x 1" x 1"
Sub-size	3" x 1/4" x 1/4"

*Please provide raw part (bar, tube, etc.) or finished product for Charpy testing. We will machine to appropriate sample size. Charpy sets (three bars) can be v-notched or un-notched and tested at temperature per your requirement.

Hardness Testing	Minimum Size
Vickers & Knoop (Microhardness)	Hardness/material dependent – please contact us
Rockwell Hardness	Hardness/material dependent – please contact us
Brinell Hardness	Hardness value dependent – please contact us
Hydrogen Embrittlement	Need whole fastener

Additional Parameters	Minimum Size
Jominy	5-1/2" long x 1-3/8" diameter
Plating Thickness	Metallographically 0.0001" (2.5 microns)*

*Other measurement options available upon request.

Alloy Chemistry (Metallurgy)	Min. Size/Weight
OES	1/2" x 1/2" x 1/16" or 1/8" diameter wire or 30 grams for remelt
Electron Dispersive Spectroscopy (EDS)	N/A – Any size*

*EDS – Maximum sample size is 3" x 3" x 3" or 1.5 lbs. max weight.

Chemical and Thermal Analysis (Polymers)	Min. Size/Weight
Fourier Transform Infrared Spectroscopy (FT-IR)	Test dependent – please contact us
Thermogravimetric Analysis (TGA)	1 gram or 1 part
Differential Scanning Calorimetry (DSC)	1 gram or 1 part

For a fast quote, call us at (815) 229-8620.