

Nickel Alloy Procurement Guide

A practical route from service conditions to a complete material enquiry.



Four questions before comparing quotations

1 What must the component withstand?

Record medium, concentration, temperature, load and cycles.

2 What exactly is being purchased?

Define the grade, product form, condition and dimensions.

3 How will acceptance be demonstrated?

Agree the specification, tests, certificate and traceability.

4 What needs confirmation in the offer?

Check technical exceptions, quantities, delivery terms and dates.

Screen candidates by the duty

These are starting points for discussion, not approved substitutions or engineering recommendations. Consult the linked official references and the project design authority.

Alloy / UNS	Procurement focus
Inconel 625 N06625	Specify the required annealed or solution-treated condition on each order line. Do not transfer a condition from tube to bar without checking the governing specification.
Inconel 600 N06600	Define the supply condition and any later forming or welding. Room-temperature tensile properties alone cannot qualify a high-temperature component.
Inconel 718 N07718	Distinguish stock for later ageing from material supplied aged. Specify test orientation, section and exact AMS revision where required; UNS alone does not establish aerospace or oilfield qualification.
Incoloy 800H N08810	Keep 800, 800H and 800HT separate. Carbon, Al/Ti controls, grain size and heat treatment must follow the specified document; a melting range is not an operating-temperature limit.
Incoloy 825 N08825	B425 covers rod and bar; use B423 when specifying seamless pipe or tube. An acid name alone does not confirm suitability or replace the specified product condition.
Monel 400 N04400	Define annealed or work-hardened condition and final surface requirements. Alloy 400 is not the precipitation-hardening K-500 grade and cannot inherit its strength requirements.
Hastelloy C-22 N06022	C-22 is not universally superior to C-276. Compare the actual medium, contaminants, temperature and relevant test data; retain specification limits separately from nominal chemistry.
Hastelloy C-276 N10276	Chemical analysis alone is not a complete acceptance check. Review product specification, condition, required tests, dimensions and the traceability of marked pieces to the material report.

Do not rank corrosion resistance by a single number or treat melting range as service temperature. For 718, heat treatment is integral to the requirement; 800H is not automatically 800HT.

A complete RFQ, one line at a time

Material identity

Copy the exact grade and suffix from the drawing. Include the standard number and required edition. An UNS number does not replace a product standard.

Product definition

State bar, tube, sheet, strip, forging or fitting. Give dimensions, tolerances, length/cut plan, finish and quantity with units.

Condition and processing

State the heat-treatment condition and later machining, welding or forming. Define any drawing allowance and test-sample orientation.

Inspection and documentation

Request the required EN 10204 document type, tests and identification. Agree PMI or third-party inspection scope before the order.

Delivery and commercial review

Give the destination and required date. Agree packaging, marking, Incoterms and technical exceptions in the quotation. Do not assume availability from a catalogue page.

Illustrative example

Alloy 625 / UNS N06625; seamless tube; ASTM B444 [required edition]; OD x wall x length; required grade/condition; quantity; tests and certificate type; destination and date. Replace every field with the project requirement before ordering.

Keep material and evidence connected

Before cutting

Record heat/lot identity and agree how markings transfer to cut pieces and bundles.

Before acceptance

Check report identifiers against the delivered markings, dimensions, condition, specification and ordered tests.

Before substitution

Compare the complete requirements. Russian grades retain their exact Cyrillic spelling and suffixes; a similar use or chemistry does not prove equivalence.

Official technical references

Inconel 625 - Special Metals

Inconel 600 - Special Metals

Inconel 718 - Special Metals

Incoloy 800H - Special Metals

Incoloy 825 - Special Metals

Monel 400 - Special Metals

Hastelloy C-22 - Haynes International

Hastelloy C-276 - Haynes International

Reference information supports screening, not design approval. Product and condition requirements must be confirmed against the specified document. Brand names belong to their respective owners. Prepared 19 October 2026.

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