



Tonimet[®]

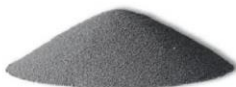
Tonimet[®] is a high quality nickel feed material specifically designed for stainless steel, low alloy steel and nickel alloy producers. Tonimet[®] is produced by a proprietary refining process at the Matsusaka Refinery in Japan.

Tonimet[®] has been engineered to deliver high nickel content, low residual impurities, excellent handling characteristics, low dusting tendency, high throughput and low manufacturing costs:

- Available as granules or briquettes to accommodate a wide range of alloy charging systems
- Unique shape and size of briquettes designed for easy handling with automated charging systems without rolling, bridging or dusting losses
- High nickel content and low impurity levels allow for its additions at any stage of the alloy-making process
- Unique shape and high nickel content allows for precise control of nickel additions to satisfy the most stringent quality requirements and to minimize the risk of overcharging excess nickel
- Optimal size ensures fast melting and minimum energy consumption during electric arc furnace melting; minimum heat losses as a convertor additive ensures maximum decarburization efficiency and minimum refining time
- Carbon intensity is 37.1 t CO₂e/t Ni, including scopes 1, 2, and 3 (upstream) emissions as of the most recent assessment year (2023)¹. Carbon intensity is reassessed on a regular basis.

Tonimet[®] is produced in compliance with the following ISO standards: ISO 9001:2015 and ISO 14001:2015.

For further information about our products, please visit our website (www.vale.com) or contact a regional sales representative.



granules



briquettes



1 or 2 tonne bag

Disclaimer: The product descriptions and specifications contained in this document are made in accordance with our analyses and the methods used to produce Vale's nickel products. While these descriptions and specifications are reflective of normal production lots, rather than each individual piece, such descriptions and specifications shall in no event be deemed or interpreted as any representation, warranty or commitment by Vale in connection with Vale's nickel products quality. Vale's nickel products quality shall be determined only in accordance with the corresponding contract terms for each transaction agreed between Vale and Vale's customer and the quality related certificate issued under such contract.

¹Independent third-party limited assurance to the general principles of ISO 14064-3 has been provided by Intertek Health Sciences Inc. Emissions allocated by economic value.

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Product Description

Form

- Granules: 10 – 100 mesh
0.2 – 0.4 mm (60 – 90%)
0.4 – 0.9 mm (10 – 40%)
- Briquettes: 20 x 30 x 15 mm

Packaging

- 1 tonne bags
- 2 tonne bags

Typical analysis (wt %)

	Tonimet [®] Briquettes	Tonimet [®] Granules
Ni*	~93	~95
Co	~1.6	~1.6
Fe	~0.6	~0.6
Cu	~0.2	~0.2
P	<0.001	<0.001
S	~0.003	~0.003
O	~2.5	~2.5

* Nickel determined by difference.