AdamIQ[™] M300



UNS K93120 | AISI 18Ni300 DIN X3NiCoMoTi 18-9-5 | W. Nr 1.2709

Our M300 maraging steel is the right "tooling purpose" powder for applications that need to balance printability, hardness and toughness. This alloy is typically used in inserts for conformal-cooling of molds in Hot Stamping, Plastic Injection Molding, High Pressure Die Casting.

Made from 100% recycled steel and renewable energy. Spherical, with high flowability and low level of impurities.

M300 is a maraging steel that offers superior strength, hardness, and toughness, making it an excellent choice for high-performance applications. Its unique strengthening mechanisms, easy heat-treatability, and suitability for additive manufacturing processes make it a top choice for tooling, molding, aerospace, and automotive components. After undergoing a simple thermal aging heat treatment, the built parts can achieve remarkable characteristics, including hardness higher than 50 HRC and yield strength around 2.000 MPa with excellent toughness. Moreover, the material boasts exceptional machinability to achieve required tolerances and finish. It can maintain its outstanding features even when exposed to mildly elevated temperatures of up to approximately 400 °C (752 °F).

Powder properties

Chemical composition in weight (%) ¹	
Iron	Balance
Nickel	18.00 - 19.00
Cobalt	8.50 - 9.50
Molybdenum	4.70 - 5.20
Titanium	0.50 - 0.80
Manganese	< 0.10
Silicon	< 0.10
Oxygen	< 0.10
Nitrogen	< 0.10
Aluminum	0.05-0.15
Carbon	< 0.03
Sulphur	< 0.01
Phosphorus	< 0.01

Main applications

Tools and molds inserts Tire sipes and molds High-performance industrial parts High-wear components

Markets

Aerospace Automotive Energy General Industry Oil and Gas

Physical test data

Nominal particle range	20-53 µm
Apparent density ²	4.1 gr/cm3
Hall Flow ³	<20 s/50g

Also available in particle sizes:

Less than 20 microns for Binder Jetting (BJT), Metal Injection Molding (MIM) or specific processes targeting very thin walls.
53-105 microns typically for Electron Beam Melting (EBM,

E-PBF) and Laser Metal Deposition (LMD).

• Specific sizing can be considered under conditions.

1. Composition fits A646 (Marage300)

2. Apparent density according to ASTM B212

3. Hall Flow according to ASTM B213





Powder morphology



SEM image AdamlQ[™] M300 20-53 µm



LOM image AdamlQ[™] M300 20-53 µm

Packaging and handling recommendations

Recycled and recyclable drum from CurTec (minimum 2.9 L / 10 kg). Sealed, includes desiccant bag.
Big bag solutions available on demand.

Ensure that you store the product in its original container in a dry area. Before using, gently tumble to prevent any segregation. If you have opened containers, it is recommended to store them in a drying oven or a controlled environment with low humidity to prevent any moisture pick up.

Safety Recommendations

SDS (Safety Data Sheet) are available on the ArcelorMittal Powders website: **powders.arcelormittal.com**



All Information in this brochure is for the purpose of information only. Technical data and information are to the best of our knowledge at the time of printing. However, they may be subject to some slight variations due to our ongoing research programme on steels. Therefore, we suggest that information be verified at time of enquiry or order. Furthermore, in service, real conditions are specific for each application. The data presented here are only for the purpose of description and considered as guarantees when written formal approval has been delivered by our company. Further information may be obtained from the address mentioned. Arcelor/Mittal Powders reserves the right to change its product range at any time without notice. All the applications and foreseen uses requires a specific analysis of technical accuracy that has to be carry out by the user. It is therefore user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

We are committed to your productivity!

Visit **powders.arcelormittal.com** or e-mail us at **contact.powders@arcelormittal.com** to talk to our experts.



ArcelorMittal Powders, S.L. C/ Las Rederas, 10 33490. Avilés, Asturias. Spain