



NC Innovations Private Limited

(MET Group of Industries)

No. 126, Ballur cross, TVS Road, Attibele Post – 562107 Bangalore Dist, India.

Tel : +91.80.27821188 | Mob : +91.98868.00052 | info@metgroup.co.in | www.metgroup.co.in



FUNCTION OF MI METALLURGY+ AND ITS ADVANTAGES

We are a leading manufacturer of specialty foundry process and finishing additives in Bangalore, India. We are primarily manufacturers of advanced additives for use in the foundry industry which is based on the formulations developed by our in-house R & D, that are aimed at solving specific problems of our customers. **“Providing Solutions Before you have a Problem”** is our company’s motto.

One of our specialty products is **MI METALLURGY+**, which is a unique clinical product to the iron metallurgy to reduce or even eliminate some of the defects that are caused due to variation in metallurgy in the liquid metal. It is used as a bath conditioner in gray and ductile iron. Below is a list of a few major casting defects and the benefits **MI METALLURGY+** brings to you:-

- a. Use of **MI Metallurgy+** eliminates formation of inter-granular carbides and imparts excellent Machinability to the castings
(Formation of inter-granular carbides is the cause for poor Machinability)
- b. Use of **MI Metallurgy+** modifies the solidification pattern during cooling in the mould and widens the spacing of dendrite tree and makes easy filling of metal into the dendrite cavities, thus, eliminates micro-porosity and pressure leakage
(Narrow spacing of Secondary Arms Spacing of Austenite Dendrite Tree is the cause for microporosity and pressure leakage in the castings)
- c. Use of **MI Metallurgy+** at final stages of melting establishes more number of ‘C’ crystals and helps the formation of desired microstructure and graphite flake distribution/nodule count in gray/ductile iron respectively free from carbides
(Due to agitation of liquid metal in induction furnace the prime ‘C’ crystals that are originally present in the metal are destroyed which otherwise act as potential source of nucleation sites upon post inoculation is the cause for less Type ‘A’ graphite flake distribution in gray iron / less nodule count in ductile iron and formation of free carbides)
- d. Use of **MI Metallurgy+** reduces some of the oxides present in the melt and eliminates the slag defects and prevents loss of ‘Mg’ during ‘Mg’ treatment in ductile iron production, thus, assures consistent quality castings with more nodularity and nodule count
(Invisible slag/liquid slag is the cause for metallic slag inclusion)
- e. As mentioned in (iii) above **MI Metallurgy+** creates more number of nucleation sites, thereby eliminates formation of free carbides
(Formation of free carbides, etc.)

What our customers had to say about MI Metallurgy+

- Mr. Anu Kumar., Tech Director at **Pillai Group, Kolhapur**

"I strongly recommend this product. I have using it for the last 1 year and am delighted to tell that it has lowered my rejection by as much as 3 % overall. It is a boon in disguise to the foundry (ferrous) I wish Mr Natarajan all the best"

- Mr. C.Rajasekar Thomas, **M/s. Texmo Industries, Coimbatore,**

"We have used your product MI metallurgy(samples available with us) along with barium based inoculants for few selected castings.

We have observed improvement & hence we would like to get another 500 kgs for conducting few more trials"

- Mr. K. Satyanarayana, Manager QC, **M/s. AKP Foundries P Ltd, Belgaum**

"With reference to using of MI Metallurgy+, at our primes is giving following good results to our products:

1. Machininability improved in castings
2. Some % of Si and C is increased in both by adding this material
3. Furnace lining is always keep cleaning"

- Mr. B.N Ingale, Head QA, **M/s. Kores India Ltd, Chakan Pune,**

"The use of MET Powder increased the nodule count and improved the micro structure, hardness, details of which are with you. These trails were conducted on esteem caliper for M/s. Kalyani Brakes Ltd, Chakan. We were observing rejection due to shrinkage after machining to the extent of 1.5 to 2.0%, but with the use of above material no shrinkage is reported after machining of 150 nos of calipers

The performance of the material is very good and we are processing order for further requirement"



We would like to take this opportunity to inform you the list of satisfied and leading customers regularly using MI Metallurgy, and the solution provided to them. Additional benefits noticed are also given:-

1. **M/s. DCM Engineering**, Roopar – *to eliminate slag related defects, improve micro-porosity and improve machinability in CI castings*
2. **M/s. Lakshmi Machine Works**, Coimbatore – *to eliminate micro-porosity and pressure tightness in ductile iron castings*
3. **M/s. A.K.P Foundries P Ltd**, Belgaum – *to improve Machinability (additional benefit noticed is furnace lining clean all the time)*
4. **M/s. India Pistons Ltd (IPL)**, Chennai – *to eliminate free carbides in thin walled gray and ductile iron piston ring castings*
5. **M/s. Texmo Industries**, Coimbatore – *to improve Machinability in CI castings*
6. **M/s. Indo Farm Equipment Ltd**, Baddi, Solan, HP – *to improve porosity, micro structure and machinability in castings*
7. **M/s. Shanthala Spherocast P Ltd**, Shimoga – *to provide carbides free castings otherwise not to be removed by heat treatment (bath conditioner)*
8. **M/s. Neeta Instruments P Ltd**, Kolhapur – *to eliminate micro-porosity and pressure tightness in ductile iron castings*
9. **M/s. Federal Mugal Goetze India Ltd**, Bangalore – *to improve micro free from carbides both gray and ductile iron piston rings castings)*
10. **M/s. Perfect Circle India Ltd**, Nashik – *to improve micro free from carbides both gray and ductile iron piston rings castings)*



11. **M/s. Autolec Division (TVS Sundram Fasteners Ltd)**, Chennai – *to eliminate free carbides in thin walled gray and ductile iron piston ring castings*

12. **M/s. Indo Shell Mould P Ltd**, Coimbatore – *to improve micro & free from carbides in heavy duty auto components*

13. **M/s. See forge India Ltd**, Coimbatore - *to eliminate porosity in windmill castings*

Many more foundries in small scale sector are being benefited from using *MI Metallurgy*+

Further, following are the foundries in the process of testing and approval of *MI Metallurgy*:-

1. **M/s.Brakes India Ltd**, Chennai – *for Machinability improvement in SG Iron*

2. **M/s.Saroj Castings**, Kolhapur – *to improve micro-porosity and improve machinability in CI castings*

3. **M/s. Mantri Metallics**, Kolhapur – *to eliminate micro-porosity and pressure tightness in both ductile and gray iron castings*

5. **M/s. Hinduja Foundries**, Chennai – *to eliminate slag and Machinability improvement in auto engine blocks*

6. **M/s. Kirloskar Ferrous Industries Ltd.**, Hospet – *to eliminate slag and Machinability improvement in auto engine blocks*

7. **M/s. Birla Accucast Ltd.**, Aurangabad – *to eliminate slag related problems in shell moulded ductile iron castings*

