Ductile-iron foundries can now efficiently treat, inoculate, and pour ductile iron from the same ladle using Elkem’s LAMET® nodulizer and TOPSEED® 1010 cover alloy. This combination gives a much quieter reaction with less spillage, fume, and slag. In addition, Elkem’s metallurgically trained sales representatives can help design process adjustments that increase magnesium recoveries and lower costs compared to conventional-treatment practices. These adjustments reduce temperature losses, allow faster filling, delay the release of magnesium, significantly improve magnesium recoveries, and give desired ductile-iron microstructures.

For a Delayed, Quieter Reaction that Leads to:
→ Less Spillage, Fume, and Slag
→ Higher Magnesium Recoveries
→ Consistent Nodular-Graphite Structure
→ Improved Quality at Lower Costs

**Reaction Delayed**

Foundries using Elkem’s LAMET® nodulizer and TOPSEED® 1010 cover alloy will notice that the magnesium reaction does not take place until after the ladle is filled with iron. Once it starts, the reaction takes up to twice as long as in conventional practices. The slow reaction increases the amount of magnesium that can be recovered from Elkem’s LAMET® nodulizer. The iron-treatment weight is also controlled more accurately when the ladle is filled before the magnesium reaction starts.

As a result, ductile-iron foundries using this practice get a well-inoculated iron with good nodularity. By treating, inoculating, and pouring from the same ladle, foundries can also reduce the temperature of the iron poured from the furnace. Eliminating the steel cover also helps reduce the treatment temperature. This improves magnesium recoveries and increases the life of furnace and ladle linings.

**See the Difference!**

In typical photos below, the new, improved practice using Elkem’s LAMET® nodulizer and TOPSEED® 1010 cover alloy is compared with a conventional practice using magnesium ferrosilicon and 75% ferrosilicon. The photos were taken 15 seconds and one minute, respectively, after iron started to pour into the treatment ladle.

**Conventional Treatment**
→ 1.1% Magnesium-Ferrosilicon
→ 0.7% 75% Ferrosilicon
→ 1.5% Steel Cover + Flux
→ Conventional Pocket

**New, Improved Treatment**
→ 1.1% LAMET® Nodulizer
→ 1.0% TOPSEED® 1010 Cover Alloy
→ No Steel Cover or Flux
→ Improved Pocket

Continued on reverse side.
**See the Difference!**

<table>
<thead>
<tr>
<th></th>
<th>Conventional Treatment</th>
<th>New, Improved Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time to Fill Ladle</td>
<td>33 seconds</td>
<td>26 seconds</td>
</tr>
<tr>
<td>Start of Reaction</td>
<td>13 seconds*</td>
<td>51 seconds*</td>
</tr>
<tr>
<td>End of Reaction</td>
<td>One minute, 10 seconds*</td>
<td>Three minutes, 9 seconds*</td>
</tr>
<tr>
<td>Total Reaction Time</td>
<td>57 seconds</td>
<td>Two minutes, 9 seconds</td>
</tr>
<tr>
<td>Magnesium Content of Iron</td>
<td>0.034%</td>
<td>0.047%</td>
</tr>
<tr>
<td>Magnesium Recovery</td>
<td>72%</td>
<td>99%</td>
</tr>
<tr>
<td>Iron-Treatment Temperature</td>
<td>2,680 deg. F</td>
<td>2,560 deg. F</td>
</tr>
<tr>
<td>Tap Weight</td>
<td>2,600 lbs.</td>
<td>2,600 lbs.</td>
</tr>
</tbody>
</table>

*after start of metal pouring

**Note** that magnesium reaction in the new, improved practice started over half a minute later than the reaction in the conventional practice. In fact, the ladle was full and was moved away from the furnace for almost half a minute before the magnesium started reacting. Since magnesium reacted with the iron for over two minutes, almost 40% more magnesium was recovered in the improved practice compared to conventional treatments.

**Knowledgeable Technical Support**

Your Elkem Foundry Alloys representative can work closely with you to redesign your ductile-iron treatment practice to maximize the benefits available from using Elkem’s LAMET® nodulizer and TOPSEED® 1010 cover alloy. For example, foundries can often use low-magnesium Elkem’s LAMET® nodulizer as a pound-for-pound replacement for high-magnesium nodulizers, reducing treatment costs substantially. Savings snowball due to large reductions in slag volumes that lower furnace- and ladle-lining costs and defect losses while improving productivity. To get the process started, please contact us below:

**In the U.S.A.**
Elkem Materials Inc.
P.O. Box 266
Pittsburgh, PA 15230
Tel.: 1-800-848-9795
Fax: 1-412-299-7238
E-Mail: customerservice@elkem.com

**In Canada**
Elkem Metal Canada Inc.
1685 Main Street West
Hamilton, Ontario L8S 1G5
Tel: 1-905-572-7273
Fax: 1-905-572-6741
E-Mail: ham.sales@elkem.com

“Lamet” and “Topseed” are Elkem registered trademarks.