

R-GRAPH[®] INOCULANTS FOR GRAPHITIZING TREATMENT

The main component of the R-GRAPH[®] inoculant is **cerium (Ce)**. It is a rare earth metal. Combining with small amounts of calcium and aluminum it impacts significantly the structure of the cast iron being treated and binds tightly oxygen to sulfur and the traces of non-ferrous metals present in the cast irons produced in EA furnaces. Thus, it creates a large amount of additional graphite crystallization centers and the strength properties of resultant castings significantly improve.

As cerium has high density, the compounds it forms with non-metallic inclusions and non-ferrous metals are not prone to liquation and can stay in the melt for a long time **thus extending the inoculating effect**. This asset is particularly important when large amounts of molten iron are poured for long periods of time.

The R-GRAPH[®] inoculant can dissolve in liquid irons at relatively low temperatures. Due to this, it can **efficiently treat "cold" cupola melted irons at temperatures as low as 1,200°C**.

Standard sizes of inoculant particles:

- 0.8-3 mm for inoculants introduced into the molten metal as it enters a ladle
- 1-10 mm for inoculants placed in the bottom of a ladle
- 0.2-0.8 mm for inoculants introduced into the molten metal as it enters a mold
- Cored wires

In the case when molten metal is poured into a ladle, 2-3 kg of inoculants is consumed per 1 t of iron. In the case when molten metal is poured into a mold, twice as small an amount of inoculants may be consumed.



It is important to know that fading of a modifier should be kept track of from the moment modification is completed not from the moment the ladle with molten mold is about to be emptied into molds.