FeSiMG 6-8 vs 8-10: Choosing the Right Nodulariser for Effective Ductile Iron Treatment

In the precision-driven world of iron casting, selecting the right alloying material can greatly influence the performance of your final product. One such critical decision is choosing between *FeSiMG 6-8 and FeSiMG 8-10*—two common magnesium-bearing alloys used in the ductile iron treatment process. These materials, often referred to as **Nodularisers**, ensure that graphite forms as nodules rather than flakes, which in turn strengthens the metal and improves ductility.

However, what is the real distinction between these two grades? Which one is suitable for your foundry? Let's dissect it in a straightforward manner.

Why Magnesium Content Matters in Iron Treatment

Converting flake graphite into a spheroidal (nodular) shape is the aim of producing ductile iron. Magnesium is the key element that makes this transformation possible. The percentage of magnesium in your additive plays a crucial role in determining how effectively this process occurs—and what challenges you might face during casting.

That's where the choice between *FeSiMG 6-8* and *FeSiMG 8-10* becomes important.

Side-by-Side Comparison

Feature	FeSiMG 6-8	FeSiMG 8-10
Magnesium Content	6% to 8%	8% to 10%
Reactivity	Moderate	High
Magnesium Recovery Rate	45%–65%	60%–75%
Suitable for	Low to mid-sulphur melts	High-sulphur melts
Control Requirement	Easier to handle	Needs tighter control during use
Casting Size	Medium to large castings	Small, thin-wall precision castings
Usage in Ductile Iron	Standard ductile iron applications	Critical applications needing high nodularity
Cost	Slightly lower	Slightly higher

When to Use FeSiMG 6-8

This grade is widely used in standard casting operations where the iron chemistry is stable and controlled. It's an excellent choice for foundries looking for a balance between performance and ease of handling.

Benefits:

- Produces consistent nodularity with minimal reactivity issues
- Suitable for medium-to-large castings
- Offers good magnesium recovery with lower cost impact
- Easier to store and apply in most foundry setups

Recommended for:

- Automotive components
- Utility castings
- Medium-thickness cast iron parts

FeSiMG 6-8 is ideal if you're running a foundry that prioritizes reliability and cost-effective production over extreme precision.

When FeSiMG 8-10 Makes Sense

With a higher magnesium content and greater reactivity, this variant is designed for more demanding applications—especially when working with sulphur-rich melts or thin-section castings. It reacts faster and more aggressively, ensuring better nodularisation even in less-than-ideal conditions.

Benefits:

- Delivers higher magnesium recovery, even in challenging melts

- Promotes better graphite nodularity for precision applications
- Suitable for high-performance and thin-wall castings
- Helps improve overall casting strength and dimensional accuracy

Recommended for:

- Engine blocks and complex automotive parts
- Aerospace-grade ductile iron
- Hydraulic and pressure-containing components

If you need performance, strength, and superior metallurgical structure in your final product, FeSiMG 8-10 is your solution.

Factors That Influence Your Choice

Still unsure which one to choose? Here are the key aspects to consider:

1. Sulphur Content in Base Iron

If your melt has high sulphur, go with the higher magnesium option. Low sulphur environments typically work well with the 6-8 grade.

2. Casting Thickness

Thicker castings can tolerate slower reactivity, making the 6-8 grade suitable. Thin-wall sections require fast nodularisation, best achieved using the 8-10 variant.

3. Foundry Conditions & Process Control

If your foundry operates with automated or controlled pouring systems, you can easily handle the more reactive grade. Manual or semi-automated processes might favor the stability of the lower magnesium variant.

4. Cost Considerations

Although the price difference isn't huge, it can impact large production volumes. Assess your application requirements before investing in higher magnesium content.

Expert Tips for Better Results

1. Preheat ladles properly to prevent premature fading of magnesium during the treatment.
2. Use correct inoculants post-treatment to ensure graphite remains nodular and stable.
3. To prevent flaws, keep the temperature and pouring techniques constant.
4. Always perform microstructure analysis to verify nodule count and shape post-treatment.

Real Impact: Why the Right Nodulariser Matters

The wrong nodulariser can result in:

- Incomplete nodularisation
- Excessive slag
- Poor mechanical properties
- Rejected castings and production losses

On the other hand, using the correct FeSiMG grade ensures:

- Uniform nodule shape and size
- Superior tensile strength and ductility
- Reduced casting defects
- Higher customer satisfaction

Need Help Choosing the Right Nodulariser?

Not sure whether to go with FeSiMG 6-8 or FeSiMG 8-10? You're not alone. Each foundry is different, and the right nodulariser depends on your exact casting goals and process variables.

At Ferro Titanium, we don’t just supply alloys—we help foundries solve production challenges with custom solutions. Our team of technical experts works with you to understand your process and recommend the right materials for maximum efficiency.

📞 Let’s Talk About Your Foundry Needs

Whether you're producing high-volume utility castings or precision-grade parts, we’re here to help.

👉 **Get in touch** with us right now for bulk supply assistance, requirements, and price.
📧 Email: anuragsinghal@sarthakmetals.com
📞 Phone: +91 7610125164
🌐 Visit: www.ferrosiliconmagnesium.com

Final Thoughts

Both FeSiMG 6-8 and FeSiMG 8-10 offer unique advantages depending on your application. The right choice will depend on your melt chemistry, casting size, and level of process control. When chosen correctly, the right nodulariser will enhance your ***Ductile Iron Treatment*** process, reduce defects, and increase output efficiency.

Don’t leave your casting quality to chance—**optimize your process with the right solution today.**

#Nodularisers #FeSiMG8-10 #DuctileIronTreatment