



MS90

Directly Compressible Magnesium Hydroxide with Starch for supplement tablets



With our specialized spray dry technology, we provide our Magnesium supplement customers with a highly compactable, directly compressible high assay (95%) Magnesium Hydroxide. Ideally MS90 is used for chewable tablets due to its smooth mouthfeel and creamy texture. However, it can also be used for swallow, gummies and other tablet forms due to its high compactability.

Why use MS90 in chewable supplement tablet?

- Our specialized spray drying technology along with a specialized grade of Magnesium Hydroxide and starch as starting raw materials enables us to produce very smooth, creamy directly compressible MS90.
- Excellent flow
- MS90 has excellent compactability and binding properties, allowing the formulator to reduce the amount of other binders in the formula; allowing room for additional actives or simply making a smaller tablet

Naturally Sourced Minerals

Magnesium is essential to human health and optimum functionality of the human body. Over the last 50 years, SPI Pharma has established a breadth of experience and knowledge to produce high quality magnesium products for pharmaceutical and healthcare products.



MS90

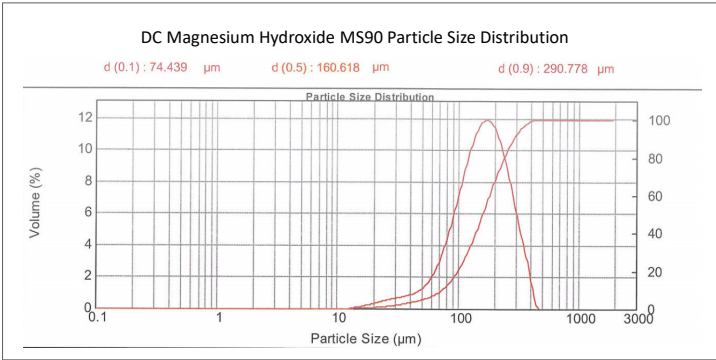
Excellent for direct compression tableting, saving time and money

Good Compactibility

- MS90 enables manufacturers to reach ideal hardness for chewable tablets using a wide range of compression force

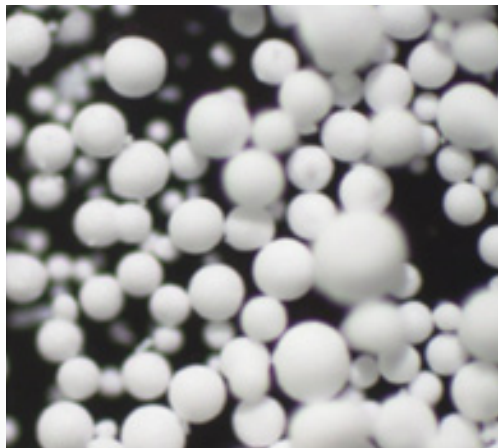
Excellent flowability

- Our specialized spray drying technology provides consistently shaped spherical particles that ensures smooth mouth feel, good flowability, and consistent feed to the tableting machine
- MS90 narrow particle size distribution ensures good content uniformity and homogeneity during dry blending with no risk of segregation



Versatility

- MS90 is a versatile ingredient that can be used as an active or as an excipient. As an excipient it can improve the gritty texture and binding properties. Also, it provides buffering properties (in a pH 10 environment)
- Can be used in many different final application forms chewable, sachet, gummies, toffees and swallow



SPI Pharma’s technical expertise will help you formulate a Magnesium based supplement tablet using direct compression.

Starting Formula using MS90 in a chewable Magnesium, Calcium and Vitamin D3 tablet

| | LABEL CLAIM per Tablet | |
|---------------------------------|--|----------------|
| Calcium Carbonate | 1500 mg CaCO ₃ equivalent to: 600 mg of Calcium (Ca ²⁺) | |
| Magnesium Hydroxide | 96 mg Mg(OH) ₂ equivalent to: 40 mg of Magnesium (Mg ²⁺) | |
| Vitamins D3 | 500 IU | |
| INGREDIENTS | % by weight | Qty per Tablet |
| CS90 at 90% CaCO ₃ | 69.44 % | 1666.67 mg |
| MS90 at 95% MG(HO) ₂ | 4.21 % | 101.02 mg |
| Vitamin D3 (100 IU/mg) | 0.21 % | 5.00 mg |
| Mannogem EZ (DC Mannitol) | 21.74 % | 521.71 mg |
| Sucralose | 0.40 % | 9.60 mg |
| Magnesium Stearate | 1.00 % | 24.00 mg |
| Flavor | 1.00 % | 24.00 mg |
| Total Tablet Weight 2400.00 mg | | |

Manufacturing Guidance

- Screening / Weighing:** screen through # 20 mesh sieve and weigh the ingredients listed in the above recipe
- Blending:** blend the ingredients for approximately 10 minutes on a Turbula Blender Type
- Tableting:** Compress the blend to the targeted tablet characteristics on a rotary tablet press

Elemental Impurities

Operating in a highly regulated industry, we understand the importance of minimal elemental impurities for our customers. We perform a thorough risk assessment on all of our products to ensure regulatory compliance. SPI Pharma has invested approximately \$1M of testing technology, resources and external testing to ensure our customers the peace of mind that our products are below the threshold and only require annual confirmation testing. Customers can depend on our certification and can alleviate their burden of testing.



Regulatory Compliance*

MS90 Magnesium Hydroxide

- ✓ Technical File
- ✓ Non-GMO
- ✓ Gluten Free
- ✓ Aflotoxin Free
- ✓ cGMP
- ✓ Nano Material Free
- ✓ Components Origin
- ✓ Latex Free
- ✓ Absence of Residual Solvents
- ✓ Absence of Phthalates
- ✓ Food Compliance
- ✓ Heavy Metals Compliance
- ✓ USP
- ✓ BSE/TSE
- ✓ Absence of Allergens

* Documents available upon request



**Excipients for
Swallow Tablets**



**Taste Masked
Actives**



ODTs/ODPs



**Effervescent
Tablets**



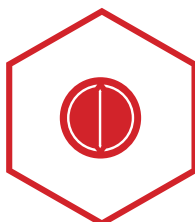
**Vaccine
Adjuvants**



**Soft Gel
Capsules**



**Antacid & Laxative
Ingredients**



**Chewable Tablets
& Lozenges**



**Nutraceutical
Applications**

in SPI Pharma

@spipharma

✉ salesinfo@spipharma.com

🌐 www.spipharma.com

🐦 @spipharma_real

📺 SPI Pharma



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