

CS90 Pharma

Directly Compressible Calcium Carbonate with Starch for antacid tablets



With our specialized spray dry technology, we provide our antacid customers with a highly compactable, directly compressible high assay (90%) calcium carbonate. Ideally CS90 is used for chewable tablets due to its smooth mouthfeel and creamy texture. However, it can be used for swallow, gummies and other tablet forms due to its high compactability.

Combine CS90 Pharma and MS90 Pharma for your antacid tablets:

- Calcium Carbonate is a typical Active Pharmaceutical Ingredient for antacid applications. In tablet forms, it can be used on its own or can be combined with magnesium hydroxide, another typical API for antacids.
- MS90 Pharma, our Directly Compressible Magnesium Hydroxide with starch is a perfect match to CS90 especially due to their similar particle size distribution, flow and compactability properties



CS90 Pharma

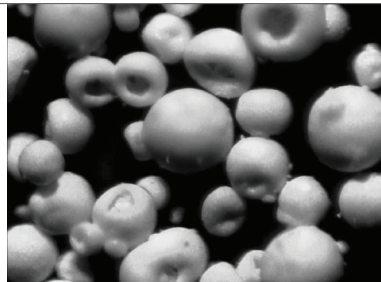
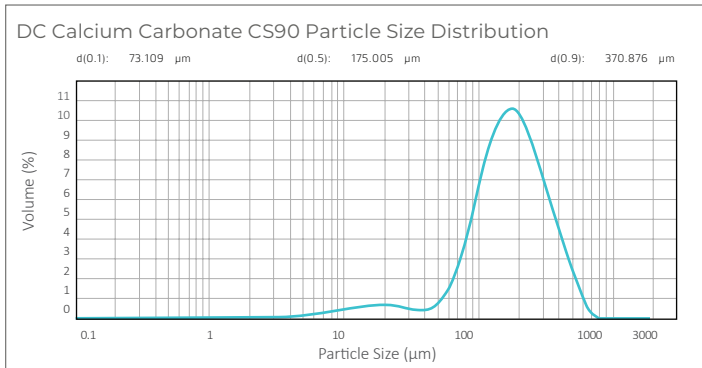
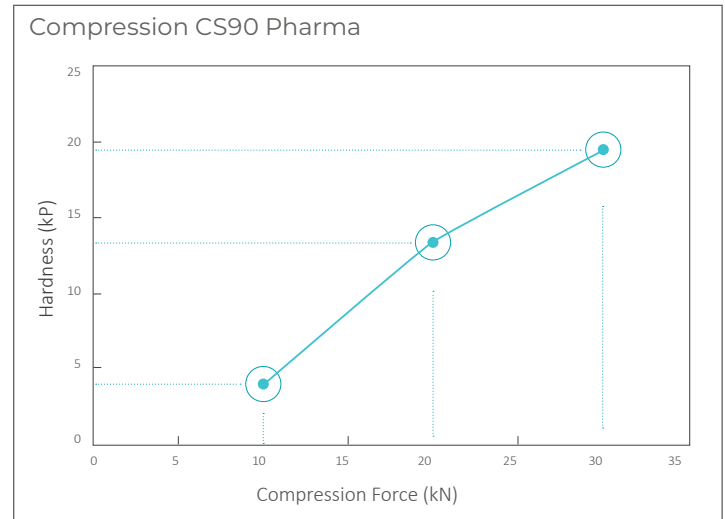
Excellent for direct compression tableting, saving time and money

Good Compactibility

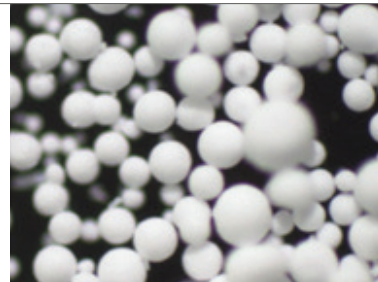
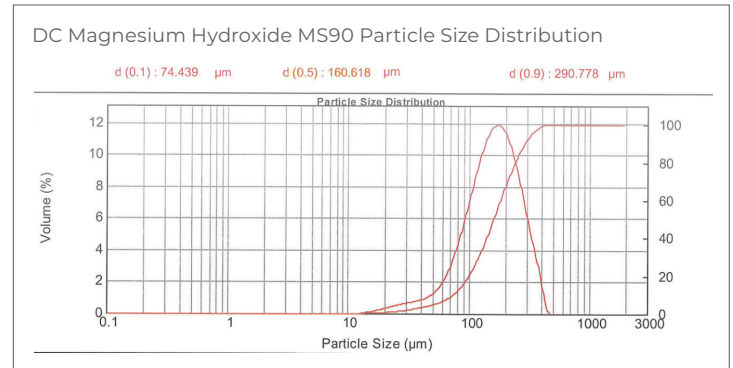
- At compression force between 10-20 kN, the CS90 Pharma and MS90 Pharma have ideal hardness for chewable Tablets.

Excellent flowability

- Our specialized spray drying technology provides very consistently shaped spherical particles that ensures good flowability
- Narrow particle size distribution for CS90 Pharma and MS90 Pharma ensures good content uniformity and homogeneity during dry blending with no risk of segregation
- Consistent feed to the tableting machine



CS90 Pharma



MS90 Pharma

Binding Properties

- CS90 Pharma and MS90 Pharma have excellent binding properties allowing the formulator to reduce the amount of other binders in the formula making a smaller tablet



SPI Pharma's technical expertise will help you formulate an antacid tablet using direct compression.

Starting formulae using CS90 Pharma and/or MS90 Pharma in a chewable antacid Calcium Carbonate tablet

	LABEL CLAIM per Tablet	
Calcium Carbonate	750 mg CaCO_3 equivalent to: 300 mg of Calcium (Ca^{2+})	
INGREDIENTS	% by weight	Qty per Tablet
DC CS90 at 90% CaCO_3	69.44 %	833.28 mg
DC Mannitol Mannogem EZ	28.96 %	341.52 mg
Sucralose	0.10 %	1.20 mg
Magnesium Stearate	1.00 %	12.00 mg
Flavor	1.00 %	12.00 mg
Total Tablet Weight 1200.00 mg		

	LABEL CLAIM per Tablet	
Calcium Carbonate	550 mg CaCO_3 equivalent to: 220 mg of Calcium (Ca^{2+})	
Magnesium Hydroxide	110 mg $\text{Mg}(\text{OH})_2$ equivalent to: 44 mg of Magnesium (Mg^{2+})	
INGREDIENTS	% by weight	Qty per Tablet
DC CS90 at 90% CaCO_3	48.89 %	611.11 mg
DC MS90 at 95% $\text{Mg}(\text{OH})_2$	9.26 %	115.79 mg
DC Mannitol Mannogem EZ	39.75 %	496.85 mg
Sucralose	0.10 %	1.25 mg
Magnesium Stearate	1.00 %	12.50 mg
Flavor (Spearmint)	1.00 %	12.50 mg
Total Tablet Weight 1250.00 mg		

Manufacturing Guidance for either formula

- 1. Screening / Weighing:** screen through # 20 mesh sieve and weigh the ingredients listed in the above recipe
- 2. Blending:** blend the ingredients for approximately 10 minutes on a Turbula Blender Type
- 3. 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*

CS90 Pharma	
MS90 Pharma	
✓	✓ Technical File
✓	✓ Non-GMO
✓	✓ Gluten Free
✓	✓ Aflatoxin Free
✓	✓ cGMP
✓	✓ USP (ingredients meet USP)
✓	✓ EP (ingredients meet EP)
✓	✓ Nanomaterial Free
✓	✓ Components Origin
✓	✓ Latex Free
✓	✓ Absence of Residual Solvent
✓	✓ Absence of Phthalates
✓	✓ Tested for Elemental Impurities
✓	✓ CEP Grade Calcium Carbonate and Magnesium Hydroxide
✓	✓ BSE/TSE
✓	✓ Absence of Allergens
✓	✓ Melamine free

*Documents available upon request.

Naturally Sourced Minerals

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.

In the United States many of our Magnesium Hydroxide based products originate from the Delaware Bay. This location was chosen due to the excellent quality and salinity of the seawater. Prior to pumping the seawater to our facility, it is filtered by using the natural sand bed of the bay to ensure no water life is affected by our process.

What happens once the extraction process is complete?

After extraction, we test the seawater to guarantee quality and return it back to the bay to support the natural ecosystem.

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 SPI Pharma



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