

## Technical Data Sheet

# Innovox<sup>®</sup> MB

## Calcium Oxide Masterbatch

**Innovox MB is a desiccant masterbatch consisting of ultra-fine particles of Calcium oxide bound in an EPDM granule, which gives exceptional mixing and dispersion characteristics.**

Calcium oxide is used as a desiccant and acid scavenger in rubber and elastomer compounds, which can contain moisture either from fillers incorporated in the formulation or by moisture absorption from high humidity environments.

Calcium oxide CaO combines with moisture to form Calcium hydroxide Ca(OH)<sub>2</sub>. This reaction chemically binds moisture and is non-reversible up to 512°C. The reaction product - calcium hydroxide - is a powder which incorporates easily and invisibly into the compound, but will also perform as an acid scavenger.

Acid scavenging capacity is particularly useful in systems containing chlorine or fluorine. Calcium oxide or hydroxide will react with any free hydrochloric or hydrofluoric acid to neutralise the acid and prevent any corrosive impact on metal parts.

Innovox MB contains high quality, ultra-fine Calcium oxide which is extremely consistent in its performance. Innovox MB is bound in EPDM granules for super-fast mixing, zero dust and extended shelf life.



### Why Innovox MB?

Competitor granules use oils and waxes, but Innovox MB is made using Birch Chemicals' market leading Calcium oxide in EPDM rubber binder. Because of this, Innovox MB will mix faster and give significantly better results in use.

### Applications

Innovox MB Calcium oxide granules are typically used in elastomers such as EPDM, applications such as extrusions and in continuous pressureless vulcanisation methods (e.g. UHF, LCM or Hot-Air-Vulcanization). The addition of Innovox prevents blisters and bubbles in the finished product.

### Addition

Dosage will depend on the moisture levels within the compound. The addition point can be varied to combat the effects of moisture in fillers or atmospheric moisture in high humidity environments.

The chemical reaction shows that a theoretical balance of one part Calcium oxide will remove one part of water. In practice, the typical dose rate for Innovox MB in a low humidity environment would be 5-6 phr.

Addition rates will also be affected by mix temperature, venting of the process and addition point. For low humidity environments, Innovox MB can be added at the start of the mixing process. For high humidity, moisture may often be absorbed if compound is stored and so Innovox MB can also be added near the final mix to overcome this. Our Innovations Team can help with advice on dose and addition point.

High levels of Innovox MB addition can be aided by the use of Birchset CR, which helps to reduce the impact on compression set and cross-linking. Please see the Birchset CR TDS for further information.

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### Properties

For product specification see the relevant sales specification and for safety information, see the Material Safety Data Sheet. Both are available on request from your sales contact.

	<b>CaO wt%</b>	<b>EP Rubber wt%</b>
Innovox MB Typical	80%	20%
	<b>D50</b>	<b>D90</b>
Calcium oxide PSD Typical	2.5 microns	5.6 microns
Granule size Typical	5mm x 5mm	
Low melt EVA sachet melting point	70 – 80°C	

### Packaging

Innovox MB is available in 1kg low melt EVA sachets which can be put directly into the mixer. Other pack sizes and packaging types available on request.

### Storage

Innovox MB must be stored inside, in clean dry conditions and unopened packaging. If stored correctly, Innovox MB has a minimum shelf life of 12 months from date of production.

## Advice and Consultancy

Our Innovations Team can help with advice on the use of Innovox MB and for a more comprehensive service, we offer Innovation consultancy which can provide mix design, safety and handling solutions.

**For more information, please see below to contact us.**



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