

Innovox[®] 97

Calcium Oxide CaO



Technical Data Sheet

Innovox[®] 97 is a desiccant powder consisting of ultra-fine particles of calcium oxide treated with dispersing agent, which gives excellent 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)₂). 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[®] 97 contains high quality, ultra-fine calcium oxide which is extremely consistent in its performance. The dispersing agent used helps to speed up mixing, reduce dusting and reduces the potential for the calcium oxide to react before it is mixed into the compound.

Why Innovox 97?

Innovox[®] 97 is made at one of our global manufacturing hubs to the same high standards as Birch Chemical's UK Innovox[®] range products. This gives less miles to market, a lower carbon footprint and competitive pricing.

For those who want our original UK manufactured product, Innovox[®] 95 is still available.

Applications

Innovox calcium oxides are typically used in elastomers such as EPDM and silicone, applications such as extrusions and in continuous pressureless vulcanisation methods (e.g. UHF, LCM or Hot-Air-Vulcanization). Addition of Innovox[®] prevents blisters and bubbles in the finished product.

The Innovox[®] range is specially formulated to prevent visible extrusion breakout and surface defects, reducing specks, lumps and streaking in production caused by unwanted moisture in the finished product.

▼ Without using Innovox[®].

A 6mm sheet, cured for 20min at 200°C. Moisture creates damaging bubbles within the compound.

▼ Using Innovox[®].

A 6mm sheet, cured for 20min at 200°C. No bubble or moisture damage.



For further details please refer to *Birch Chemicals Technical Report | BCTROX 001*, found on our website, birchchemicals.co.uk or email info@birchchemicals.co.uk.

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

The chemical reaction between calcium oxide shows that a theoretical balance of one part calcium oxide will remove one part of water. In practice, typical dose rate for Innovox[®] 97 in a low humidity environment would be 5-6 phr. This is 20% lower than for competitor granules.

Addition rates will also be affected by mix temperature, venting of the process and addition point. For low humidity environments, Innovox[®] 97 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[®] 97 can 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[®] 97 addition can be aided by the use of Birchset CR, which helps to reduce the impact on compression set and cross-linking. See the Birchset[®] CR TDS for more information. In continuous pressureless vulcanisation methods (e.g. UHF, LCM or Hot-Air-Vulcanization), addition of Innovox[®] prevents blisters and bubbles in the finished product.

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.

	CaO wt%	Dispersion aid wt%
Innovox 97 Typical	99.5%	0.5%
PSD Typical	D50 2.5 microns	D90 5.6 microns
Low melt EVA sachet melting point	70 – 80°C	

Packaging

Innovox[®] 97 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[®] 97 must be stored inside, in clean dry conditions and unopened packaging. If stored correctly, Innovox[®] 97 has a minimum shelf life of 12 months from date of production.

Advice and Consultancy

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

For more information, please contact us.

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Improved
Moisture Control
for Rubber**



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