

Technical Data Sheet

Masterox[®]

Masterox is specially formulated desiccant, 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 plastic, polymer and nylon compounds, which can contain moisture from fillers, organic or recycled components 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.

Using Masterox is an easy and cost effective way to reduce moisture in plastic and nylon manufacture, saving the energy required to heat dry and increasing production speed and capacity.

Masterox contains high quality, ultra-fine calcium oxide which is extremely consistent in its performance.

Applications

Masterox desiccants are typically used in:

- Blown Films – EVA etc
- Desiccant for Blowing agents
- PVC plastisol (plastic dip)
- PVC Flexible Profile
- PVC Leather (coated fabrics)
- Eco / Bio plastics
- Desiccant Masterbatch (plastic pellets incorporating calcium oxide used for easy addition)
- Nylon 66
- Nylon recycling and transport

Addition of Masterox prevents blisters and bubbles in the finished product.



Plastic leather with defects

Holding it up to the light shows the defects easily



Birch Chemicals

TDS Masterox

Addition

Dose will depend on the application and moisture levels within the compound. Addition point can be varied to combat the effects of moisture in fillers, organic or recycled components or atmospheric moisture in high humidity environments and control the moisture content of nylon.

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 Masterox in a low humidity environment would be 5%.

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

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.

Masterox 10 very fine particle size powder and is used in thin film plastics, coated fabrics for car seats, fascias and door trim etc.

Masterox P very fine particle size powder bound with plasticiser oil and is used in thin film plastics, coated fabrics for car seats, fascias and door trim etc

PSD Typical (Masterox 10, Masterox P)	D50 2.5 microns	D90 5.6 microns
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Masterox 90 fine particle size powder, used in extruded or moulded plastics and plastic Masterbatch.

PSD Typical (Masterox 90)	D50 3.7 microns	D90 40 microns
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Packaging

Masterox is available in 20kg boxes. Other pack sizes and packaging types available on request.

Storage

Masterox must be stored inside, in clean dry conditions and unopened packaging. If stored correctly, Masterox 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 Masterox 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 on:

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