

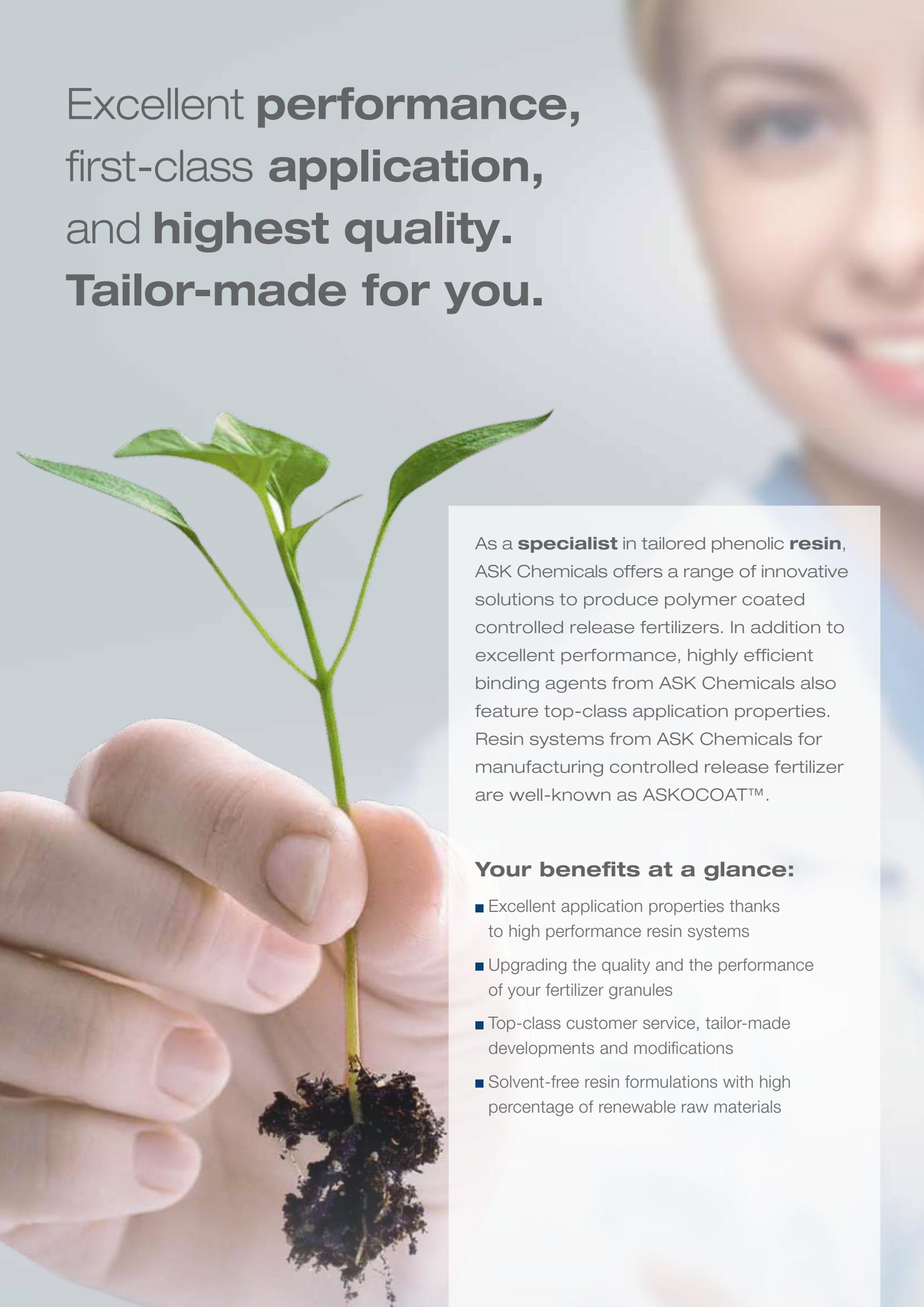


Controlled Release Fertilizer

ASKOCOAT™



RESINS FOR PAINTS AND COATINGS



Excellent **performance**,
first-class **application**,
and **highest quality**.
Tailor-made for you.

As a **specialist** in tailored phenolic **resin**, ASK Chemicals offers a range of innovative solutions to produce polymer coated controlled release fertilizers. In addition to excellent performance, highly efficient binding agents from ASK Chemicals also feature top-class application properties. Resin systems from ASK Chemicals for manufacturing controlled release fertilizer are well-known as ASKOCOAT™.

Your benefits at a glance:

- Excellent application properties thanks to high performance resin systems
- Upgrading the quality and the performance of your fertilizer granules
- Top-class customer service, tailor-made developments and modifications
- Solvent-free resin formulations with high percentage of renewable raw materials

ASKOCOAT™

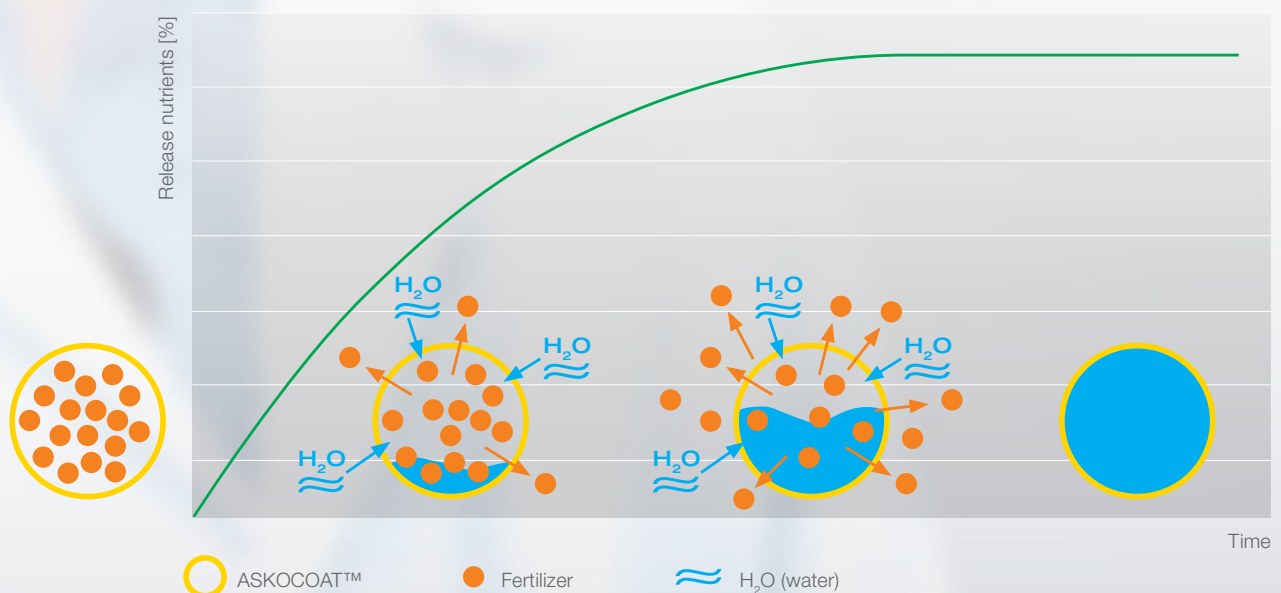
Fertilizer Coatings

ASK Chemicals offers 2K PU resin systems for the production of polymer coated controlled release fertilizers based on all kind of granules.

The patented coating system consists of two components, a polyol and an isocyanate. The polyol is a modified solvent-free phenolic resin formulation containing more than 60 % renewable raw materials. The isocyanate component is a modified isocyanate formulation including a bench life extender to achieve a controllable reaction in the mixing equipment. Both components are solvent-free and contain only reactive ingredients to prevent leach out of coating chemicals into the soil.

The fertilizer granules are coated at ambient to moderate temperatures in a drum mixer. Therefore, also granules with lower melting points like urea, can be coated with this technology. The resin system shows a homogeneous distribution without any defects on all kind of granules. The curing reaction takes place by a polyaddition reaction and is catalyzed by addition of a gaseous or liquid amine to the resin system. Using a liquid amine with high flash points prevents the use of ATEX equipment. A spray curing process secures optimal catalyst distribution. The coatings process is very fast and efficient, the typical curing time for one layer is below two minutes to be tack free.

Release of nutrients



This resin system is especially designed for fertilizer coatings to achieve excellent adjustable release properties. Water is able to slowly penetrate through the coating layers into the granule and dissolves the nutrients of the fertilizer granule. The nutrients are released due to osmosis. The release time of nutrients is controlled by coating thickness, thinner coatings result in faster release, and temperature, warmer temperatures result in faster release. The release time can be adjusted from 2 to 24 months depending on the quantity of coating material. The patented phenolic PU coating increases the stability and elasticity of the coated fertilizer and prevents salt stress caused by uncontrolled release of nutrients.



ASKOCOAT™

Benefits

- Excellent release properties
- High mechanical stability and temperature resistance of coated granules
- Extremely fast coatings process at moderate temperatures
- Tack free coatings
- Solvent-free and 100 % reactive resin system

ASKOCOAT™ – fertilizer coatings using a gaseous catalyst

Product	Component	Viscosity (mPa.s)	Further characteristics
ASKOCOAT™ 420	Polyol	1,000 – 2,000	OH-number: 200 – 400 mg KOH/g
ASKOCOAT™ 520	Isocyanate	150 – 300	NCO-content: 30 – 35 %
Catalyst 704	Amine		

ASKOCOAT™ – fertilizer coatings using a liquid catalyst

Product	Component	Viscosity (mPa.s)	Further characteristics
ASKOCOAT™ 420	Polyol	1,000 – 2,000	OH-number: 200 – 400 mg KOH/g
ASKOCOAT™ 500	Isocyanate	150 – 300	NCO-content: 30 – 35 %
Catalyst 804	Amine		Flash point: ~40 °C
Catalyst 806	Amine		Flash point: ~88 °C



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Technical data sheets and guide formulations are
provided on our website: www.ask-chemicals.com.

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