DELIVERING
ADAPTIVE SOLUTIONS WITH THE RIGHT PARTNER

BINDER SOLUTIONS

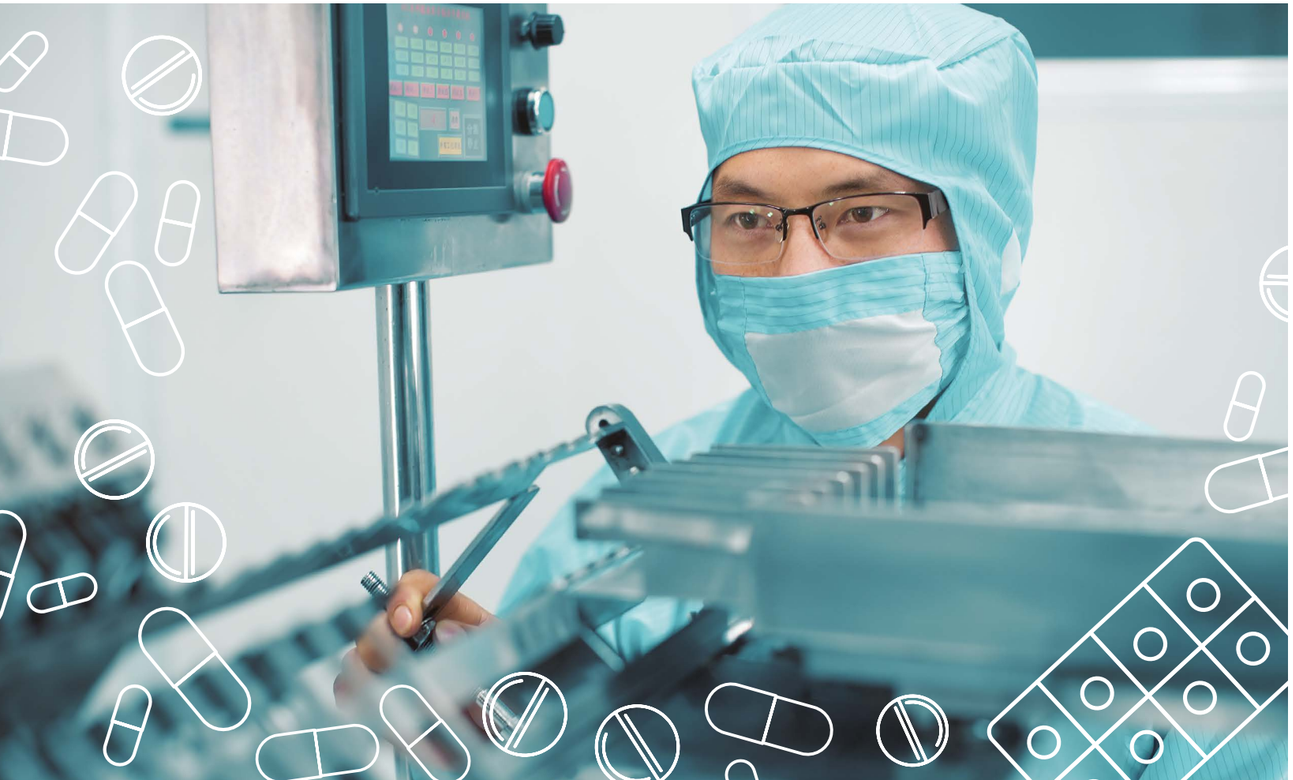
ROQUETTE
Offering the best of nature™

AN UNWAVERING COMMITMENT TO ENABLING
LIFE-SAVING PHARMACEUTICALS

Designed with functionality and flexibility in mind, our range of binders enable robust formulations — no matter the process.

From lab development to industrial production, Roquette understands that binder performance is key to your medicines' attributes and ultimately, your productivity. We offer a comprehensive range of chemical residue-free, reacting ingredient-free, natural origin binders for superior product stability along with the technical expertise to provide binder selection guidance for your specific process parameters.

Collectively, our experience and diverse offering enables an efficient path forward for customers seeking reliable binders that impart desired homogeneity, flowability and mechanical strength to their formulations. Batch after batch, trust Roquette to deliver quality binder solutions.



BINDER SELECTION CONSIDERATIONS

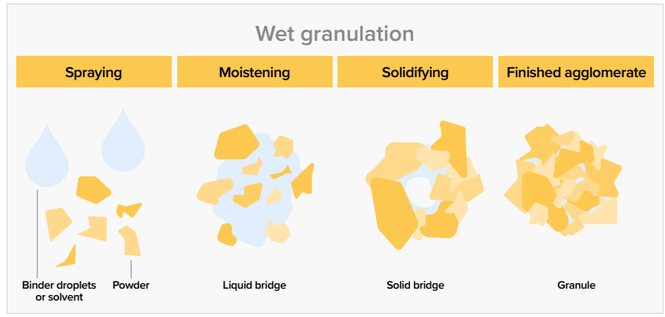


Figure 1: The wet granulation process, depicting the intermediates and principles involved in achieveing granules.

The selection of wet granulation binders is influenced by a host of intrinsic materials factors and process constraints, including incorporation (dry or wet), granulation equipment (high shear, fluid bed), solvent and impact on formulation (disintegration/ dissolution, stability, hardness, friability).

Figure 1 shows the mechanism by which granulation is achieved via wet granulation.

GEARED FOR GRANULATION

Designed as versatile solutions for several different granulation processes, like high shear, fluid bed and twin screw granulators, our binders provide flexibility where you need it. Additionally, their aqueous solubility enables seamless preparations of organic solvent-free formulations. No matter the formulation, stage of incorporation, API stability or dissolution profile, Roquette has the binder you need.

In addition to native starches that have been relied on as proven binders for centuries, **LYCATAB® PGS** is a controlled, cold water-soluble, pregelatinized starch, that exhibits reproducible binding properties for reliable performance.

Due to its low viscosity ensuring rapid disintegration of granules or tablets, **LYCATAB® DSH** is designed for both low and high shear processes, and can be used in binding solution or added directly to the dry powder mix. Our **LYCOAT® RS** range combines low viscosity, fast hydration and strong binding properties, making it a binder that's easily adaptable for incorporation into multiple granulation processes.

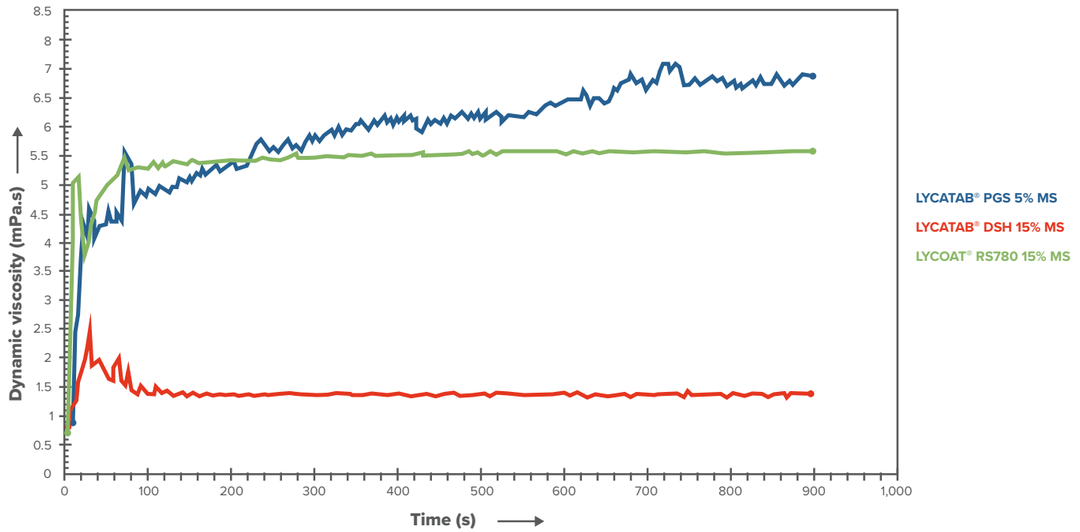


Figure 2: Lycoat RS combines the benefits of ease of use (fast hydration, low viscosity) and superior product stability (API containing amine function).

BINDER SOLUTIONS

	Native starches	LYCATAB® DSH	LYCOAT® RS range	LYCATAB® PGS
		Maltodextrin	Pregel HP pea starch	Pregel corn starch
Soluble	Hot water	Water (or mixture with organic solvent)	Water (or mixture with organic solvent)	Water (or mixture with organic solvent)
Speed of full hydration	Slow	High	High	Slow
Viscosity	High	Low	Low-medium	High
Maillard reaction	No	Yes	No	No
Compressibility/ binding/granule strength	High	Low	High	High

BINDER SOLUTIONS

BINDERS

	LYCATAB® DSH	LYCOAT® RS 780	LYCOAT® RS 720	LYCATAB® PGS
	Maltodextrin	Pregelatinized HP Pea Starch	Pregelatinized HP Pea Starch	Pregelatinized Corn Starch
Solubility (cold water) Solvent choice	>50% (viscosity is a limiting factor)	>50% (viscosity is a limiting factor)	>50% (viscosity is a limiting factor)	Approx. 10%
Speed of full hydration Internal addition/binding solution	High	High	High	Slow
Viscosity Low / high shear / both	Low	Low/medium	Medium	High
Maillard reaction Stability	Yes	No	No	No
Compressibility/binding/ granule strength	Low	High	High	High

LEARN MORE ABOUT ROQUETTE DISINTEGRANT AND SUPERDISINTEGRANT PRODUCTS AT

www.roquette.com | pharma@roquette.com

PH_OD_BINDER-SOLUTIONS-BR-05.1e.12/2018

ROQUETTE

Offering the best of nature™