

# Coatings Portfolio

from BASF Pharma Solutions

**BASF Pharma Solutions** offers film-forming polymers and additive chemistries for your aesthetic, protective, and functional coating needs.

**BASF's Kollicoat® portfolio** provides easy-to-use coating options based on your tablet's needs and desired functionality. Products from our Kolliphor®, Kolliwax®, Kollisolv® and Kollidon® lines support with plasticizing, anti-tacking, adhesive and pore-forming functionalities.





**Instant release**

- Kollicoat® IR** – The coating for instant-release, without the need for added plasticizer. Also suitable for drug layering, wet-binding, and pore-forming with high flexibility, easy and fast processability, and low solution viscosity.
- Kollicoat® Protect** – All the benefits of Kollicoat® IR combined with moisture and oxygen protection.

**Gastric release**  
(solubility triggered at pH < 5.5)

- Kollicoat® Smartseal 30 D** – Aqueous polymer dispersion for taste-masking.
- Kollicoat® Smartseal 100 P** – Powder form suitable for aqueous and organic processes, taste masking and moisture protection.

**Enteric release**  
(solubility triggered at pH > 5.5)

- Kollicoat® MAE 30 DP** – Aqueous dispersion of methacrylic acid ethyl acrylate copolymer for enteric coating that confers gastric resistance.
- Kollicoat® MAE 100-55** – Enteric copolymer powder form with optimal flow suitable for aqueous and organic processes. Requires neutralization for aqueous processing.
- Kollicoat® MAE 100-55 Fine** – Same benefits of Kollicoat® MAE 100-55 with fine particle size.
- Kollicoat® MAE 100 P** – Partially neutralized powder form for faster aqueous redispersion and solution preparation.

**Sustained release**  
(solubility independent of pH)

- Kollicoat® SR 30 D** – Aqueous polymer dispersion, providing a pH-independent film coating for sustained release of pellets, tablets, and multi-unit pellet systems (MUPS).



Powder



Dispersion

**Film-forming polymers:**

Trade name	Monograph/Chemical name	PRD number
Kollocoat® IR	Ph.Eur. Macrogol poly(vinyl alcohol) grafted copolymer USP/NF Ethylene glycol and vinyl alcohol copolymer JPE Polyvinyl alcohol – polyethylene glycol graft copolymer	30132288
Kollocoat® Protect	Polyvinyl alcohol graft polyethylene glycol copolymer and polyvinyl alcohol	30235579
Kollocoat® Smartseal 30 D	Methyl-methacrylate – diethylaminoethyl methacrylate copolymer dispersion	30492630
Kollocoat® Smartseal 100 P	Methyl-methacrylate – diethylaminoethyl methacrylate copolymer	30585559
Kollocoat® MAE 30 DP	Ph.Eur. Methacrylic acid – ethyl acrylate copolymer dispersion 30 percent USP/NF Methacrylic acid and ethyl acrylate copolymer dispersion JPE Methacrylic acid copolymer LD	30057597
Kollocoat® MAE 100-55 Kollocoat® MAE 100-55 Fine	Ph.Eur. Methacrylic acid – ethyl acrylate copolymer (1:1), type A USP/NF Methacrylic acid and ethyl acrylate copolymer JPE Dried methacrylic acid copolymer LD	30638896 30736102
Kollocoat® MAE 100 P	Ph. Eur. Methacrylic acid – ethyl acrylate copolymer (1:1), type B USP/NF Partially-neutralized methacrylic acid and ethyl acrylate copolymer	30070095
Kollocoat® SR 30 D	Ph.Eur. Poly(vinyl acetate) dispersion 30 percent USP/NF Polyvinyl acetate dispersion	30067541



## BASF Pharma Solutions provides products that support all steps of the film-forming process, including wetting, spreading, film adhesion and formation.

Our experts are prepared to help you overcome film coating concerns, such as film cracking, brittleness, and lack of adhesivity, as well as stability and processability issues. Our products can support short processing times, high-solids loadings, and functional solutions.

### Plasticizers and dispersing agents:

Trade name	Monograph/Chemical name	PRD number
Kolliphor® SLS Kolliphor® SLS Fine	Ph.Eur. Sodium laurilsulfate	30569546 30554762
	USP/NF Sodium lauryl sulfate	
	JP Sodium lauryl sulfate	
	INCI Sodium lauryl sulfate Sodium dodecyl sulfate	
Kollisolv® PEG 400 G	Ph.Eur. Macrogol USP/NF Polyethylene glycol	30607818
Kollisolv® PEG 600		30607820
Kollisolv® PEG 1450		30607752
Kollisolv® PEG 8000		30607822
Kollisolv® PG	Ph.Eur. Propylene glycol USP/NF Propylene glycol	30554051
Kolliphor® PS 20	Ph.Eur. Polysorbate 20 USP/NF Polysorbate 20	30776820
Kolliphor® PS 80	Ph.Eur. Polysorbate 80 USP/NF Polysorbate 80 JP Polysorbate 80	30776819
Kolliphor® SML 20	Ph.Eur. Sorbitan laurate	30776707
Kolliphor® P 188 Kolliphor® P 188 Micro	Ph.Eur. Poloxamer 188 USP/NF Poloxamer 188	30631536 30631537
Kolliphor® P 407 Kolliphor® P 407 Micro	Ph.Eur. Poloxamer 407 USP/NF Poloxamer 407	30631538 30631539
Kollisolv® GTA	Ph.Eur. Triacetin USP/NF Triacetin	30554748
Kolliwax® CA	Ph.Eur. Cetyl alcohol USP/NF Cetyl alcohol JP Cetanol	30554718
Kolliphor® RH 40	Ph.Eur. Macrogolglycerol hydroxystearate USP/NF Polyoxyl 40 hydrogenated castor oil	30555082



BASF Pharma Solutions provides a range of **functional excipients** for tablet and softgel coatings.

### Pore-forming polymers and adhesion promoters:

Trade name	Monograph/Chemical name	PRD number
Kollidon® VA 64	Ph.Eur. Copovidone USP/NF Copovidone JP Copolyvidone	30499398
Kollidon® 12 PF Kollidon® 17 PF Kollidon® 25 Kollidon® 30	Ph.Eur. Povidone USP/NF Povidone JP Polyvinylpyrrolidone	30034972 30034981 30034967 30034974
Kollidon® CL-M* <small>*Opacifier in TiO<sub>2</sub>-free coatings</small>	Ph.Eur. USP/NF Crospovidone JP	30444355

Kollicoat® IR

Pore formers can be used with Kollicoat® SR 30D for tuning drug release.

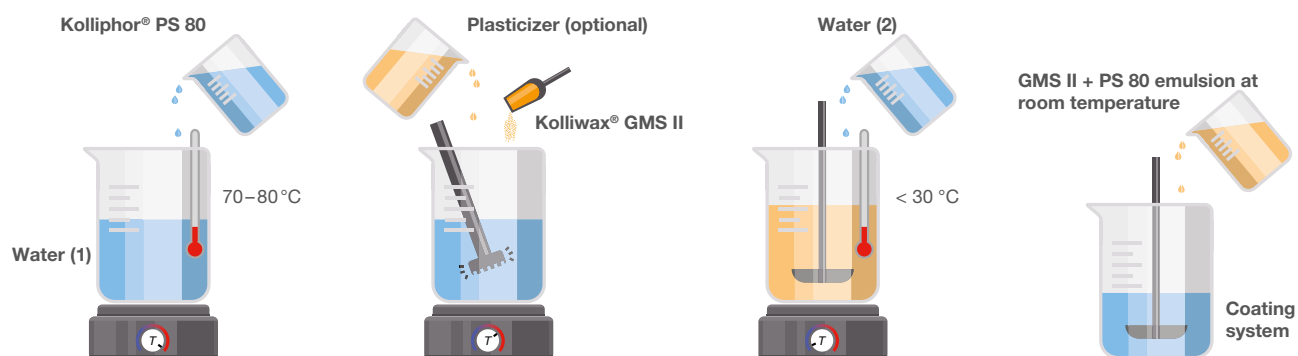
## Anti-tacking formulation:

Trade name	Monograph/Chemical name		PRD number
Kolliphor® PS 80	Ph.Eur USP/NF JP	Polysorbate 80 Polysorbate 80 Polysorbate 80	30776819
Kolliwax® GMS II	Ph.Eur. USP/NF	Glycerolmonostearate 40–55 (type II) Mono- and di- glycerides	30554444

Some polymer dispersions are susceptible to shear stress and can coagulate under high-shear mixing. In this case, preparation of the emulsified talc-free alternative can be done separately and added to the final coating system of choice. Here is an example on how to formulate the talc-free anti-tacking agent for 1 Kg of total coating suspension.

### Formulation talc-free anti-tacking suspension:

Step	Name	Function	Amount (g)
1	Water (1)	Solvent	200 g
	Kolliphor® PS 80	Emulsifier (High HLB)	3 g
2	Kolliwax® GMS II	Emulsifier (Low HLB)	8 g
	i.e. TEC	Plasticizer (optional)	i.e. 25 g (15% of dry polymer)
3	Water (2)	Solvent	207 g
4	Coating system of choice i.e. Kollicoat® MAE 30 DP	Film former	(557 g of dispersion at 30 % solids = 167 g dry polymer)



### Step 1

#### Surfactant solution

Dissolve Kolliphor® PS 80 in approx. half of the total water amount. Heat the solution to a temperature of 70–80 °C.

### Step 2

#### Emulsification

Add Kolliwax® GMS II and plasticizer (optional - e.g. triethyl citrate) while homogenizing with a high-shear mixer. Keep mixing for at least 10 min.

### Step 3

#### GMS II + PS 80 emulsion

Let the mixture cool under stirring while slowly adding the remaining half of the water amount.

### Step 4

#### Spray suspension

Slowly add the cold GMS II + PS 80 emulsion to the coating dispersion. Continue stirring to obtain a homogeneous mixture.



ZoomLab® offers modules on instant and enteric release coating formulations. It also considers potential for incompatibilities based on the active ingredient. Full formulations, manufacturing instructions, and cleaning procedures are available.

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