



We create chemistry

Kolliccoat[®] IR

For Unique High Performance
Film Coating & More

Approved EXTERNAL PRESENTATION



The Evolution of Film Coating



Kollicoat® IR is the latest polymer development in instant release film-coating.

It represents the benchmark with regard to process safety, reliability, and efficiency.

Sugar coating

HPMC

Hydroxypropylmethyl cellulose

- high viscosity
- complex formulations
- long processes
- brittle coats

PVA

Polyvinyl alcohol

- low viscosity
- complex formulations
- faster processes
- reduced brittleness but tackiness

Kollicoat® IR

- lowest viscosity
- simple formulations
- fastest and most stable processes
- no brittleness



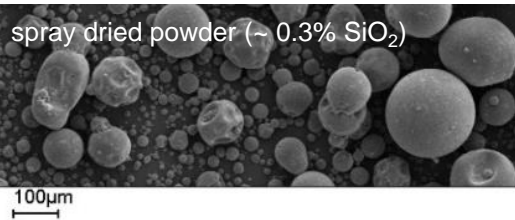
Kollicoat[®] IR is available as...

Single Polymer

Kollicoat[®] IR

by BASF

for individual innovative coating needs and more



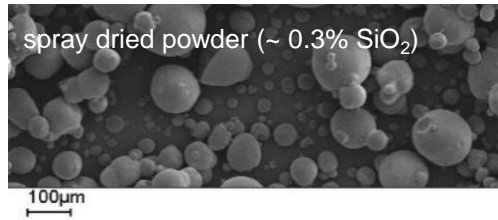
Polymer Mixture

Kollicoat[®] Protect

by BASF

(60% Kollicoat[®] IR / 40% PVA)

for the formulation of protective IR coatings



Ready-to-use Coating

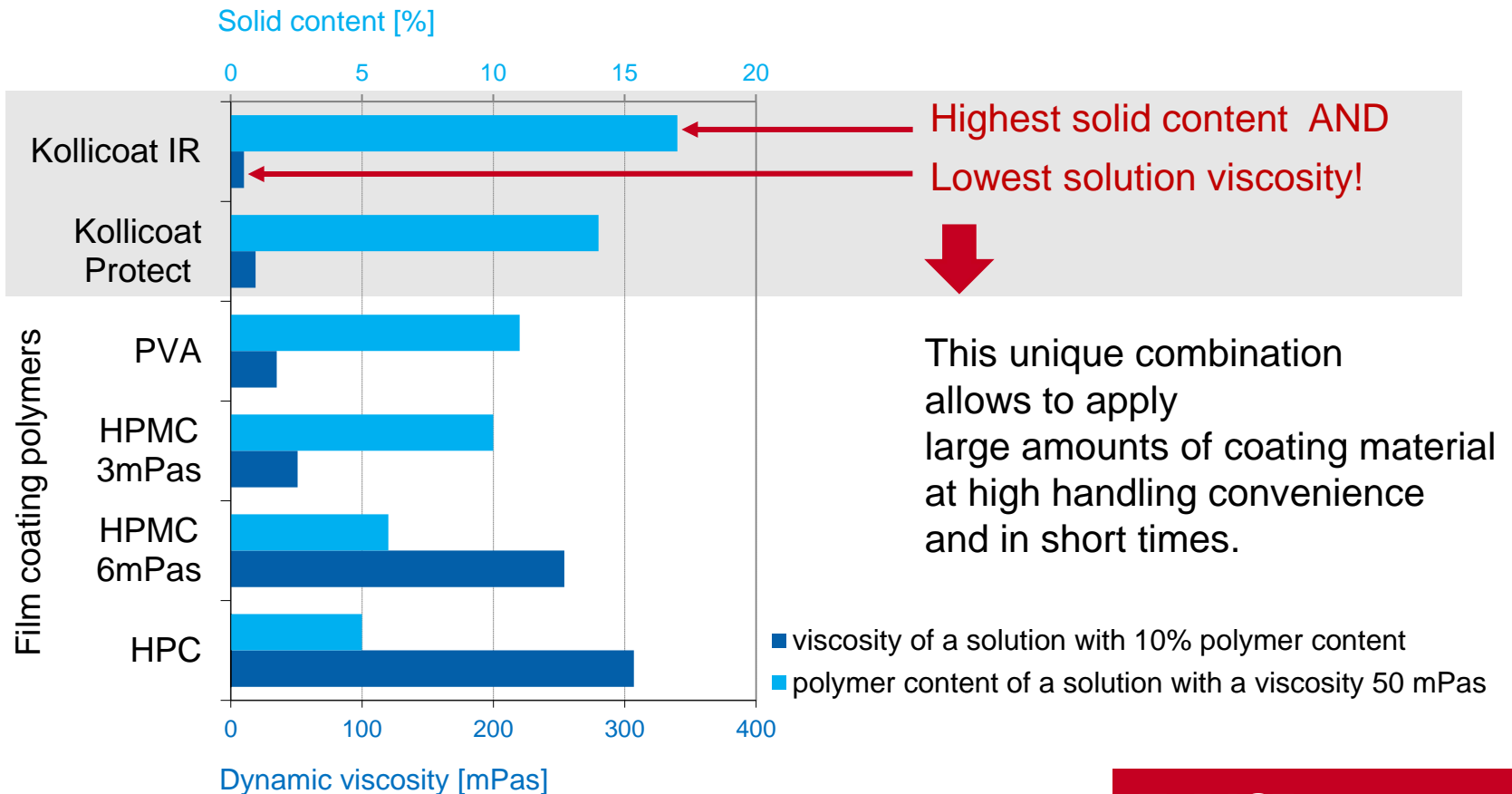
OPADRY[®] QX

by Colorcon

(Kollicoat[®] IR inside)

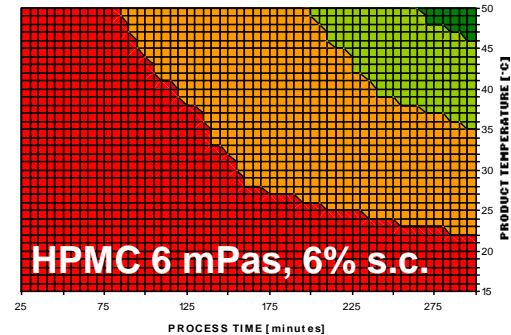
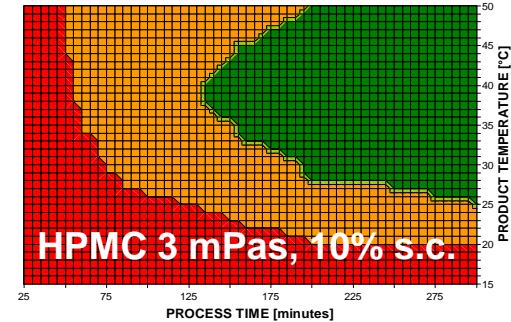
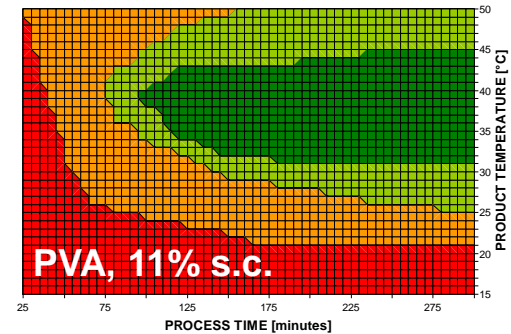
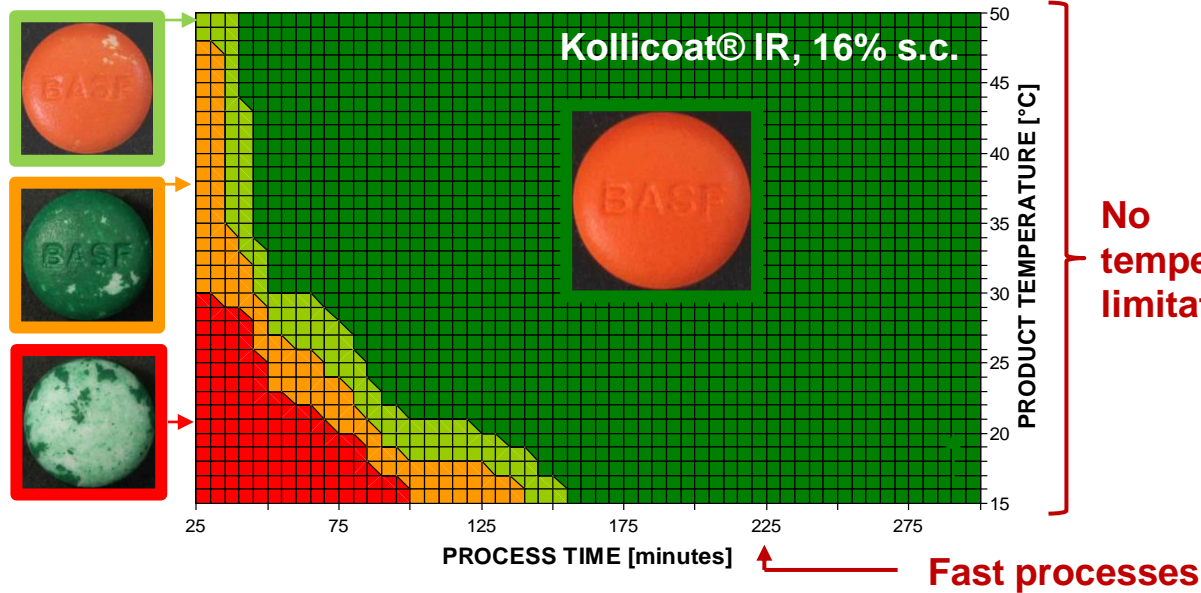


Kollicoat® IR combines high solid contents with low solution viscosity



Kollicoat® IR enables easy and economic film coating

Coating with 50 mPas polymer solutions; s.c.= solid content



Kollicoat® IR gives faster and more stable film coating processes than other film coating polymers. This

- saves time
- saves energy
- reduces batch failures



Kollicoat® IR allows film coating without plasticizer

Kollicoat® IR does not need a plasticizer.

This makes it the only polymer that can be coated purely without ANY additives.



The needlessness for plasticizer can significantly increase Formulation Safety!

- less components reduce formulation complexity
- film formation is always excellent and does not depend on plasticizer type or distribution
- elasticity is maintained upon storage (no plasticizer migration or degradation upon storage)



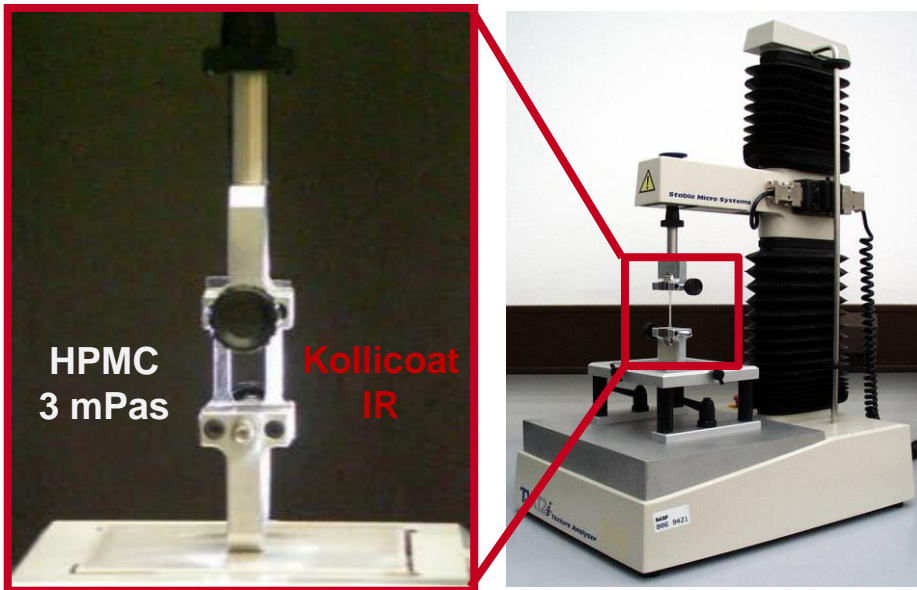
Kollicoat® IR is highly elastic for non-brittle tablet surfaces



Kollicoat® IR is much more elastic than HPMC.

This supports excellent films on tablet surfaces being

- non-brittle
- less prone to defects



HPMC
3 mPas

Kollicoat
IR

Texture analyzer device for determination of elongation at break

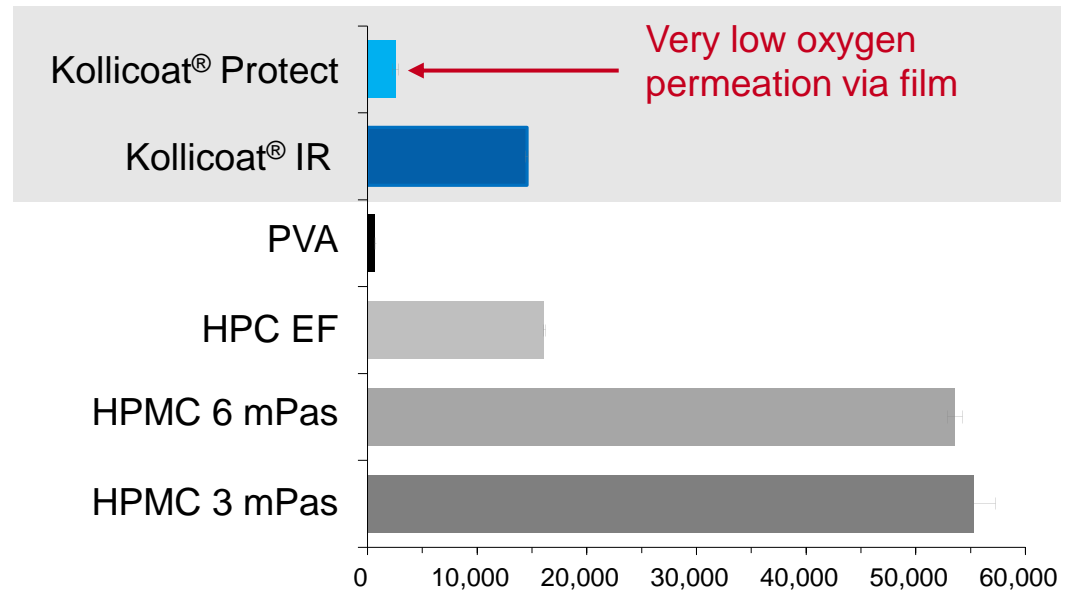


Kollicoat® IR and Kollicoat® Protect are peroxide free and support oxidation protection

Kollicoat® IR and Protect help in two ways to protect your API from oxidation:

- Kollicoat® IR is intrinsically free of peroxides
- Kollicoat® Protect in addition has excellent oxygen barrier properties

Oxygen gas permeation via polymer films
[cm³ μm/(m² bar day)]

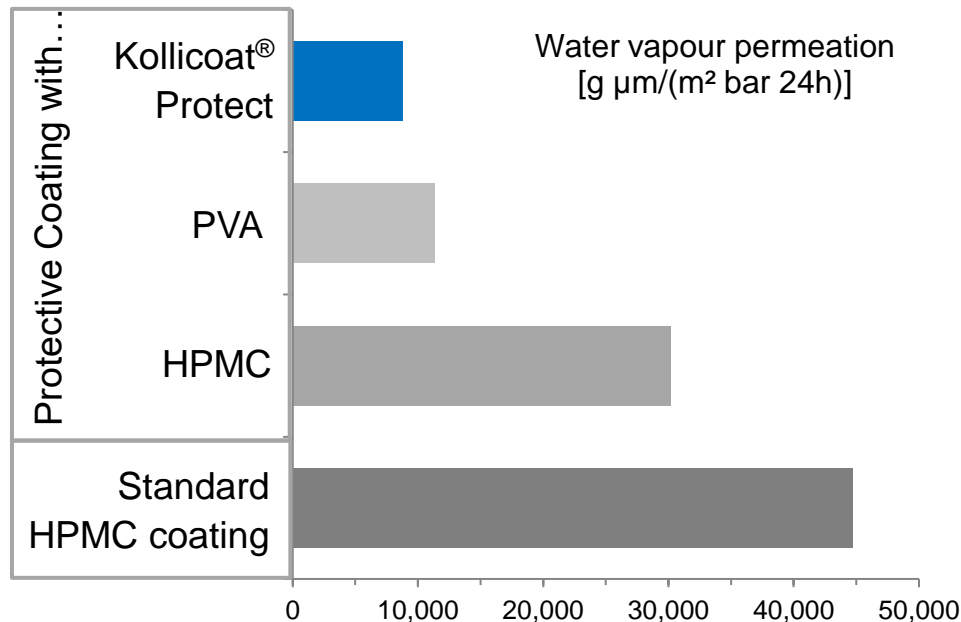


Samples: 50 μm polymer films;
Method: Diffusion Cell acc. to DIN 53380-3: 23°C / 85% r. h. → 23°C / 0% r. h.



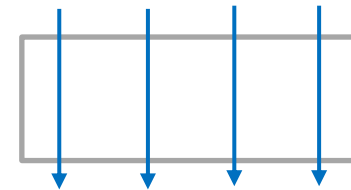
Kollicoat® Protect can protect your API from humidity

Kollicoat® Protect can hold extraordinarily high amounts of pigments: up to 75% relative to the polymer! Thereby, it forms a highly effective moisture barrier.

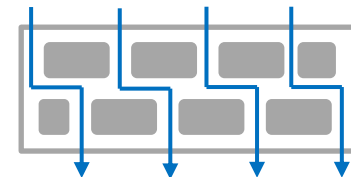


Moisture diffusion theory:

■ fast / direct diffusion in pure film



■ prolonged diffusion via barrier in pigmented film

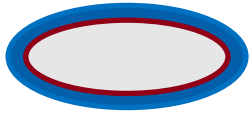


Additional components of protective coatings:

- Kollicoat Protect based: talc, titanium dioxide, iron oxide red
- PVA based: lecithin, talc, titanium dioxide, xanthan gum
- HPMC based: MCC, stearic acid, titanium dioxide, Al-lake

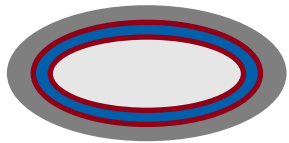


Kollicoat® IR serves all your instant release coating needs and more



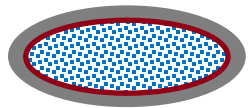
Instant release coating – moisture and oxygen protection

Even fast melting tablets are coated with Kollicoat® IR based formulations, still allowing for very fast dissolution



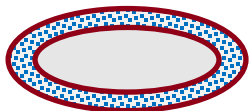
Sub-coating

Safe and easy application, providing high process reliability while maintaining the formulation simple
→ no further excipients are required



Wet binder

Strong wet binder for all types of fillers, peroxide free character
→ providing high degree of formulation safety



Pore former

Reliable component in sustained release film-coating formulations
→ high elasticity prevents cracks and supports product safety



Drug layering

Due to its excellent binding capacity, elasticity and peroxide free character, Kollicoat® IR is ideal for drug layering
→ high drug load
→ no interaction with API



Kollicoat® IR and Kollicoat® Protect Fact Sheet

Kollicoat® IR

Kollicoat® Protect

Compendial compliance	Ph. Eur.: Macrogol Poly(Vinyl alcohol) Grafted Copolymer USP/NF: Ethylene Glycol and Vinyl Alcohol Copolymer JP: Polyvinyl alcohol - polyethylene glycol graft copolymer	Not monographed. Consists of 55-65% Kollicoat® IR 35-45% Polyvinyl alcohol
CAS number	96734-39-3	96734-39-3 + 9002-89-5 + 7631-86-9
PRD number	30132288	30235579
Article number	55554797	50391593
Packaging	20 kg (60 l PE drum with PE in-liner)	25 kg (120 l PE drum with PE in-liner)
Sample size	500 g	500 g
Manufacturing site	Ludwigshafen (Germany), Wasserburg (Germany)	Ludwigshafen (Germany), Offenburg (Germany)
Physical form	Spray dried powder	Spray dried powder
Retest period	24 months	36 months



 **BASF**

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