

# LUVOBATCH®

Customized masterbatches

## LUVOBATCH® Film Additives

for clear benefits in  
polymer film  
production



Lehmann & Voss & Co.



## LUVOBATCH® Film Additives for Polymer Films with a Function

Modern applications call for innovative solutions that cannot be achieved through film structures alone. Additives to modify base polymers such as PE, PP, PS or PA are absolutely essential in order to selectively achieve the desired properties. The metering and dispersion of the relevant additives during the film production generally presents film producers with an almost insolvable task. Required quantities are generally too low and varying supply forms such as liquid, paste or powder cause problems.

In our tailor-made LUVOBATCH® masterbatches, the desired additives are optimally dispersed. Thus they are able to effectively fulfil their objectives. In addition to standards such as Anti-Block, Slip, UV stabilization and thermal stabilization, our range also includes combinations of additives and – of course – customer-specific formulations.

In our technical center, we offer the expertise required to work closely together with our clients develop the appropriate solution for each individual application.



The products named in this brochure reflect only a fraction of our portfolio.  
We specialize in products that meet your requirements.

## Anti-Block by LUVOBATCH®

We supply Anti-Block masterbatches with an impressive level of flexibility, especially adapted to meet your requirements. When selecting the active additives, we pay particular attention to your applications and needs. Good Anti-Block properties require an accurately balanced formulation with the correct particle size, adapted to the individual production procedure. Some products have a special “easy-opening” effect, such as LUVOBATCH® EV AB 9864.

To meet the highest standards of reliability, speed and assure economic feasibility in the production of packaging materials, we developed LUVOBATCH® PA AB 9886 B. It complies with the strictest standards in quality and enables high efficiency in production processes. Its excellent Anti-Block characteristics guarantee smooth production processes and stable extrusion, especially for BOPA film.

LUVOBATCH®				
	Loading	Recommended dosage	Transparency	Product description / Applications
PA AB 9706	6%	1–5%	●●●●●	For highly transparent PA films, based on synthetic SiO <sub>2</sub>
PA AB 9886 B	6%	1–3%	●●●●●	For highly transparent PA films, based on synthetic SiO <sub>2</sub> with a narrow particle size distribution, designed for use in BOPA
PE AB 5329	50%	0,5–2%	●●●●○	For highly transparent films, such as UV stabilized agricultural films
PE AB 5333	15%	2–6%	●●●○	Standard PE films, based on natural SiO <sub>2</sub>
PE AB 5337	70%	0,5–2%	●●○○○	Highly filled, cost efficient, for PE films, based on kaolin
PE AB 9016	10%	0,5–5%	●●●●●	For highly transparent PE films, based on synthetic SiO <sub>2</sub>
PE AB 9325	20%	1–5%	●●●●○	For highly transparent, thin-layered PE films
PE AB 9882	50%	0,5–5%	●●●●○	Thin-layered, transparent films with reduced abrasiveness
PP AB 9643	5%	1–5%	●●●●●	For highly transparent, thin-layered PP films such as BOPP, based on synthetic SiO <sub>2</sub> with a narrow particle size distribution

●○○○○ = translucent  
●●●●● = highly transparent

# LUBRICATIONS by LUVOBATCH®

## Migratory Slip Systems

These are conveyed to the outside by migration and create an invisible yet persistent film of lubricant on the surface of the film. Fast-running processes are adversely affected by high coefficients of friction. We reduce them so that you can work smoothly. Modify the slip properties of your film as required with additives for optimizing the external slip characteristics. Migratory slip do not form any connection with the polymer.

LUVOBATCH®	Loading	Recommended dosage	Transparency	Product description / Applications
EV AB 9092	30% / 3%	1–3%	● ● ● ○ ○	Transparent EVA/PE films
EV AB 9282	50% / 3%	1–10%	● ● ○ ○ ○	Highly filled, cost efficient, for EVA/PE films with an additional dispersion additive
EV AB 9864	32,5% / 9%	5–7%	● ● ● ○ ○	Transparent EVA/PE films with optimized machine runability
PE SA 5330	5%	1–3%	● ● ● ● ●	Blown PE films such as shrink wrap films, easy opening, slow migratory slip agents
PE SA/AB 5331	5% / 5%	1–3%	● ● ● ○ ○	Blown PE films such as shrink wrap films, easy opening, slow migratory slip agents
PE SA/AB 5332	5% / 10%	1–3%	● ● ● ○ ○	Blown PE films, easy opening, slow migratory slip agents
PE SA/AB 9788	3% / 15%	1–5%	● ● ● ● ●	Blown PE films, based on synthetic SiO <sub>2</sub>

## Non-Migratory Slip Systems

In contrast, a different mechanism is possible as well. We offer a non-migratory slip masterbatch, based on 50% ultrahigh molecular weight siloxane. This helps to achieve a controlled coefficient of friction (CoF), without affecting secondary operations such as printing and sealing.

EverGlide	Polymer	MFR g/10min	Loading	Recommended dosage	Product description/ Applications
<b>MB 150</b>	PPH	12 (230 °C / 2,16 kg)	50 %	0,5 – 10 %	Internal and external non-migratory slip agent for use as processing aid, release agent and for reduction of the CoF
<b>MB 450</b>	LD PE	8 (190 °C / 2,16 kg)	50 %	0,5 – 10 %	Internal and external non-migratory slip agent for use as processing aid, release agent and for reduction of the CoF
<b>MB 1550</b>	PET	–	50 %	0,5 – 10 %	Internal and external non-migratory slip agent for use as processing aid, release agent and for reduction of the CoF
<b>MB 1950</b>	PA 6	–	50 %	0,5 – 10 %	Internal and external non-migratory slip agent for use as processing aid, release agent and for reduction of the CoF

## Anti-Static by LUVOBATCH®

As electrical insulators, plastics tend to build up electrostatic charges and attract dust. LUVOBATCH® offers numerous solutions to prevent this effect. Hydrophilic additives migrate to the surface and bond water molecules to form a film that wets the surface of the plastic. The resulting Anti-Static effect works on polymer products such as films, plastic packaging and plastic fibres. As an alternative, we offer non-migratory, permanent Anti-Static agents.

LUVOBATCH®	Loading	Recommended dosage	Effect	Product description / Applications
PE AS 4001	10 %	1 – 2 %	Long Time	Active functionality at low relative humidity, highly loaded
PE AS 5335	5 %	1 – 2 %	Long Time	Active functionality starts after 48 h at a relative humidity of 35 %
PE AS 5338	5 %	1 – 2 %	Long Time	Active functionality at low relative humidity, for applications such as electronic packaging
PE AS 5426	5 % / 5 %	1 – 4 %	Long Time	Long-term antistatic with reduced CoF
PE AS 9218	10 %	1 – 2 %	Fast/slow	Synergistic mixture of two active substances
PE AS 9768	5 % / 40 %	1 – 4 %	Long Time	Cost efficient masterbatch containing CaCO <sub>3</sub>

## Thermal Stabilizers by LUVOBATCH®

These highly sophisticated masterbatches prevent damage to the plastic due to excessive heat exposure. Free radical initiated chain reactions, that cause damage to the polymer chains are efficiently blocked by LUVOBATCH®. By using radical scavengers and antioxidants we effectively help you in preventing loss of gloss, discolorations and functional limitations such as chalking. Our range covers thermal stabilization for both processing and long-term use.

LUVOBATCH®	Loading	Recommended dosage	Product description/ Applications
PA AO 0043	18,9%	1–3%	To be used in transparent and unfilled PA6 products
PA HS 9611	10%	1–3%	Improvement of long-term temperature stability in colored and opaque PA6
PE AO 9050	3%	1–4%	Prevents build up of gel particles in PE films
PP AO 0077	10%	2–3%	Improvement of process and long-term temperature stability in PP for temperatures up to 150 °C

## UV Stabilizers by LUVOBATCH®

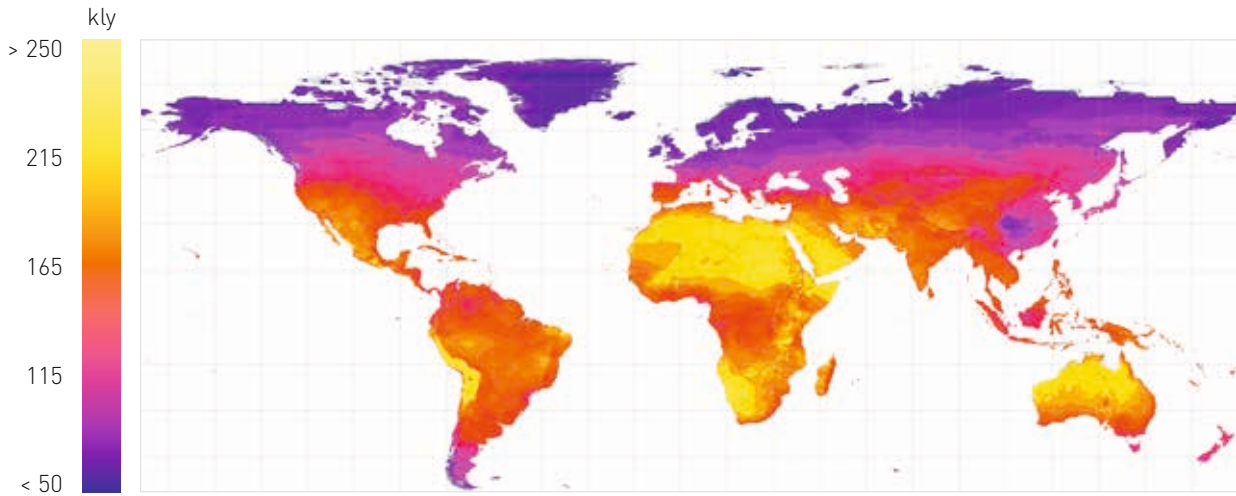
UV stabilizers by LUVOBATCH® are the perfect protection for thermoplastic resins. Our UV protective products offer a variety of benefits such as avoidance of discolorations, color stability, lack of inherent color and a low tendency to migrate. Due to its high energy, UV radiation can destroy your polymers in a very short time – particularly when acting in conjunction with harmful environmental factors. Surfaces become matt and form chalky deposits, with cracks and decay following.

Masterbatches by LUVOBATCH® offer a number of solutions for UV stabilization that can be adjusted to work together with each other: UV absorbers and hindered amine light stabilizers (HALS). The absorbers filter the harmful components from the light and transform them into heat. HALS additives prevent photooxidation products such as peroxides and radicals from reacting on the surface and in deeper layers. The LUVOBATCH® portfolio has a comprehensive product range for light stabilization. Ecological and economic considerations go hand in hand in this respect.

LUVOBATCH®	Loading	Recommended dosage	Product description/ Applications
PA UV 5164	10 %	10 – 12 %	UV stabilization of PA films
PE UV 5324	20 %	1 – 5 %	For use in PE and PP films, highly loaded
PE UV 5328	10 %	1 – 5 %	For use in high-end PE and PP films, tapes and fibers, applications of light color
PE UV 5339	10 %	1 – 5 %	For use in high-end PE and PP films, tapes and fibers, applications of light color, not for transparent applications
PE UV 5359	21 %	0,5 – 5 %	Excellent chemical resistance, for use in agricultural films
PE UV 9854	15 %	2 – 5 %	For standard PE films
PP UV 5082	20 %	1 – 3 %	Highly loaded, for use in special PP films



## Annual amount of Global Horizontal Irradiation (GHI)

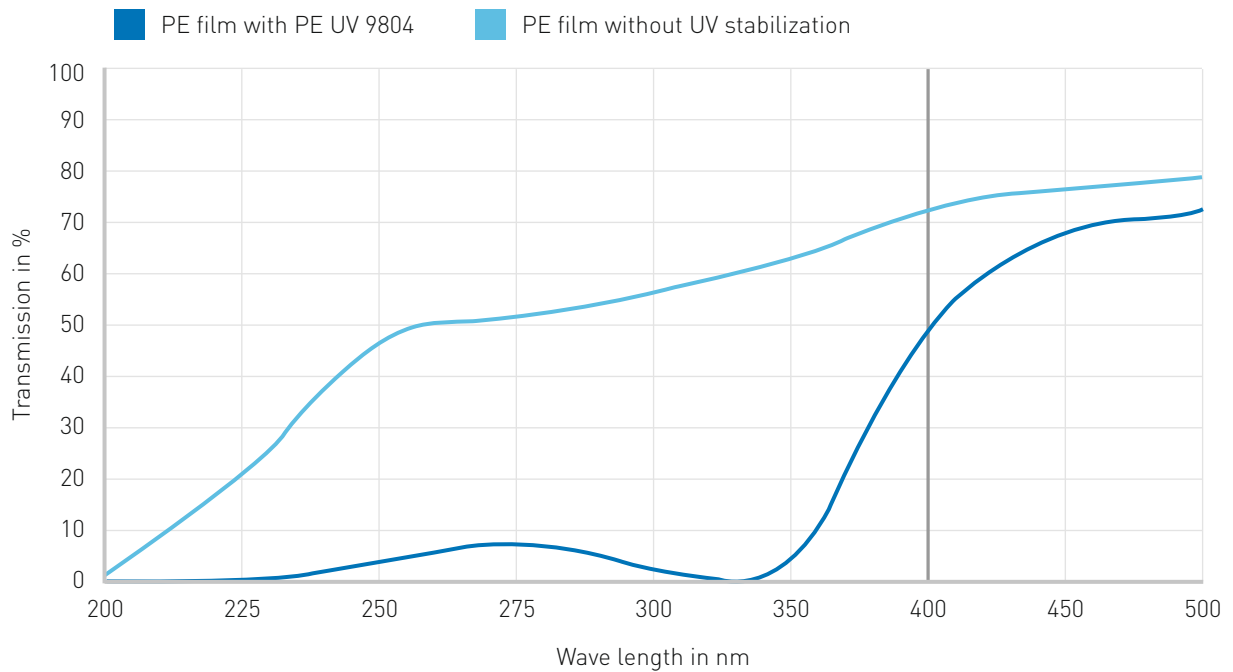


Source: Meteonorm 7.1.5; uncertainty 8 %  
Period: 1991–2010; Grid size 0,125°

meteonorm  
September 2015



## UV absorption LUVOBATCH® PE UV 9804 (6 % in 50µm PE film)



# Anti-Fog by LUVOBATCH®

Are you looking for additives to prevent fogging of clear packaging? LUVOBATCH® offers specially developed anti-fogging agents which are suitable for direct contact with food. As a result, your product always appears in the best light. Most fresh produce, such as meat and fruit, is bought largely based on its visual appearance. Supermarket customers use their eyes to convince themselves that the food is fresh. Transparent packaging is therefore a must: foggy packaging will quickly cause customers to doubt the freshness of the packed goods.

Anti-Fog masterbatches by LUVOBATCH® ensure that a thin water film is formed on the surface of the packaging instead of droplets (condensation). This is of importance for fresh goods. Packaged products are and remain clearly identifiable, while the formation of potentially fogging water droplets is prevented. Our masterbatches, approved for use in food applications, undergo extensive testing and are suitable for packaging food without any reservations.

LUVOBATCH®			
	Concentration	Recommended dosing	Applications
PE AF 5306	-	3-5%	Anti-Fog effect for PE food packaging films, especially lidding films
PP AF 5131	20%	8-10%	Anti-Fog effect for PP food packaging films, especially lidding films



1 PE without Anti-Fog

2 PE with LUVOBATCH® PE AF 5306

## Processing Aids by LUVOBATCH®

If you wish to optimize your extrusion process, increase output and reduce energy consumption, our processing aid masterbatches are practically unbeatable. LUVOBATCH® Processing Aids are based on fluoropolymers to optimize your processes. The fluoropolymer film that adheres well to metals in particular, acts as a lubricating layer in the extruder. The benefits are many: low surface energy, faster and more even melt flow with less risk of process disruption, while formation of sharkskin is avoided. Deposits on the dies are reduced, film and profile surfaces attain higher quality. Processing temperatures and wear also decline. To achieve these benefits, only low dosage levels are needed and subsequent processing steps such as printing, sealing or shrink-wrapping remain unaffected.

One special feature of LUVOBATCH® is that as the only supplier worldwide, we are also able to provide a processing aid based on EVOH!

LUVOBATCH®	Loading	Recommended dosage	Product description/ Applications
<b>EVOH PPA 5157</b>	5%	1 – 2%	EVOH based PPA for use in high-end and thin wall applications. Also available with a loading of 2%
<b>PA PPA 9659</b>	5%	1 – 2%	For use in extruded PA extrusion products
<b>PE PPA 5313</b>	2%	1 – 2%	LLDPE based PPA for use in standard applications such as bags and tubular films
<b>PE PPA 5314</b>	5%	1 – 2%	LLDPE based PPA for use in standard applications such as bags and tubular films.
<b>PE PPA 9118</b>	2%	1 – 2%	For simple applications such as carrier bag films, etc.
<b>PE PPA 9679</b>	5%	0,5 – 2%	For highest requirements, temperature stability up to 400 °C

**Contact us:**

**LUVOBATCH®**  
**Lehmann&Voss&Co. KG**

Plant Wandsbek  
Schimmelmanstr. 103  
22043 Hamburg  
Germany

phone: +49 40 44 197 247

fax: +49 40 44 197 614

e-mail: [luvobatch@lehvoss.de](mailto:luvobatch@lehvoss.de)

[www.luvobatch.com](http://www.luvobatch.com)