



Baerlocher Additives for PVC

Window and Technical Profiles



BAERLOCHER



we add character to plastics

We add character to plastics



Plastics open new avenues for the future. Additives essentially determine properties and quality of the end product. As a global leader in additive supply, Baerlocher has for more than 50 years been successfully providing support to the plastics industry by developing and manufacturing high-quality plastics additives.

Baerlocher products

- Baeropan
- Baerostab
- Baeropol
- Baerodur
- Baerorapid
- Baerolub
- Baerocid
- Ceasit, Zincum



Thirteen production sites in Germany, Great Britain, Italy, France, the United States, Malaysia, India, Korea, Brazil, Peru and Argentina as well as a sales network covering more than 40 countries make the Baerlocher group of companies a strong partner. This global presence and more than 800 employees worldwide make sure that we are always close to the customer. Future-oriented, we are continuously investing in research and development. A large number of in-house research scientists and technical experts ensure our considerable creative potential and innovative power. Baerlocher has R+D facilities in Germany (München-Unterschleissheim), France (Marseille), Italy (Lodi), the United States (Dover, Ohio) and India (Mumbai).

Environmentally sound production processes as well as the safety and protection of people and environment are key corporate goals. As a globally active group of companies we are aware of our responsibility, regardless of time or place. We are committed to the principles of “Responsible Care”: Our quality management is certified to ISO 9001 and our environmental management system to ISO 14001, encouraging our employees to work together in a responsible way. This policy will not least benefit our customers.

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Additives for the Extrusion of PVC Window and Technical Profiles

Extruded PVC profiles are products with excellent technical properties that meet the most demanding economic and ecological requirements. Applications are: window frames, shutters, cable ducting, skirting, siding, gutters etc. Baerlocher PVC additives allow profiles of high quality to be made efficiently, imparting to the finished products specific performance characteristics, such as good weathering resistance.

Baerlocher develops tailor-made products to suit the needs of each customer and manufacture them at one of the worldwide production sites. Special emphasis is always placed on customer focus and consistent quality. We offer a full range of stabilisers, from proven Lead stabilisers to the meanwhile generally accepted Calcium/Zinc stabilisers. All stabiliser types are available in various supply forms ranging from powders to one-packs in granule form.



Baerlocher PVC Additives

- high-performance
- tailor-made
- quality-controlled
- future-orientated
- cost-efficient

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Window Profiles

Lead and Calcium/Zinc stabilisers

Lead stabilisers are still widely used because of their processing latitude, good cost/performance ratio and outstanding heat stability.

Baerlocher has continuously developed the Calcium/Zinc systems to produce stabilisers which are not just equivalent but in some respects even superior to Lead formulations. The latest-generation Calcium/Zinc stabilisers offer good performance at considerably lower addition levels than Lead stabilisers or previous Calcium/Zinc systems.

In addition, the 2 % lower density of a Calcium/Zinc-stabilised dryblend is a key consideration in the comparison of dryblend costs.

Example 1

Components	[phr]	[phr]
S-PVC, k-value 65	100.0	100.0
Baerodur E-ST 5D	7.0	7.0
Filler	10.0	10.0
Titanium dioxide	3.5	3.5
Pb stabiliser	5.4	–
Ca/Zn stabiliser	–	3.8

Baerorapid processing aid is included in stabilisers



Weathering resistance

Weathering resistance is a key requirement of profiles, especially window profiles. Over the last decades, Lead-stabilised window profiles have proven their outstanding durability under different climatic conditions. They maintain their mechanical properties, such as impact strength or dimensional stability, even when exposed to strong temperature changes, alternate periods of humid and dry weather and solar radiation. Calcium/Zinc stabilisers exhibit better colour hold than traditional Lead systems both in artificial and natural weathering.

Example 2

Components	[phr]	[phr]
S-PVC, k-value 65	100.0	100.0
Baerodur E-ST 5D	7,0	7,0
Filler	6.0	6.0
Titanium dioxide	3.5	3.5
Pb stabiliser	5.4	–
Ca/Zn stabiliser	–	3.8

Baerorapid processing aid is included in stabilisers

Xenon test



The Xenon test illustrates the outstanding weathering resistance of PVC window profiles. The use of Calcium/Zinc stabilisers delays “chalking” in comparison with Lead stabilisation.

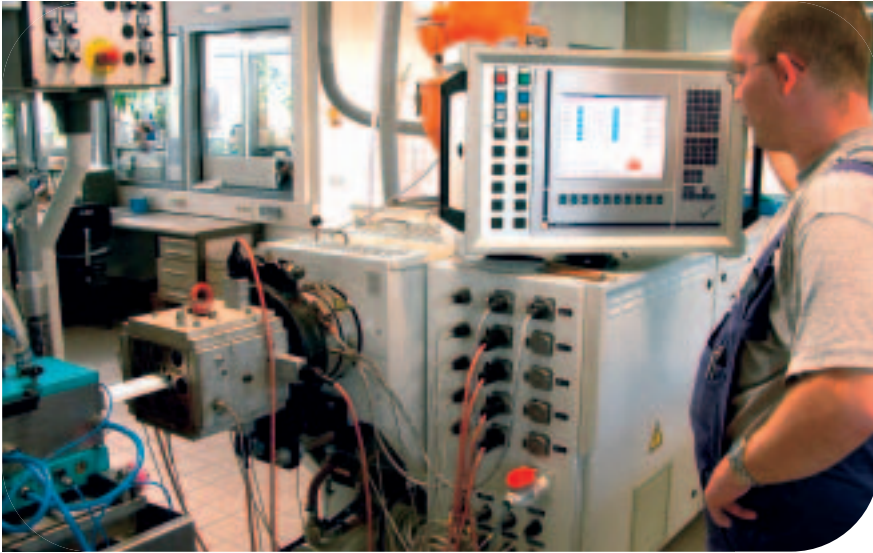
(Colour deviations may occur due to printing variations)



Xenon test apparatus

Baerlocher PVC additives impart outstanding durability to window profiles. Even after many years in use recycling is possible.





Modern technical equipment enables Baerlocher to develop customised recipes. The picture shows a twin screw profile extruder in Baerlocher's laboratory.

Processing properties

Baerlocher has further improved the modern Calcium/Zinc formulations in terms of dosage, which now is below 4 phr in most cases. Generally the processing aid is included in the one-packs. Nevertheless they give good early colour and excellent colour hold under mechanical and thermal stress. It is thus possible to produce profiles of consistently high quality even with a variety of machinery and tools. When processed with suitable lubricant systems, Calcium/Zinc-stabilised profiles compare equally with Lead-stabilised profiles in terms of surface gloss.

Supply forms

Baeropan	MC	R	TX	Y	Dosage [phr]	
50869 FP	●	●	●	–	approx. 5.4	Pb stabiliser
9417 FP	●	●	–	●	approx. 3.8	Ca/Zn stabiliser

MC = powder; R = granules; TX = pellets; Y = extrusion granules

Technical Profiles

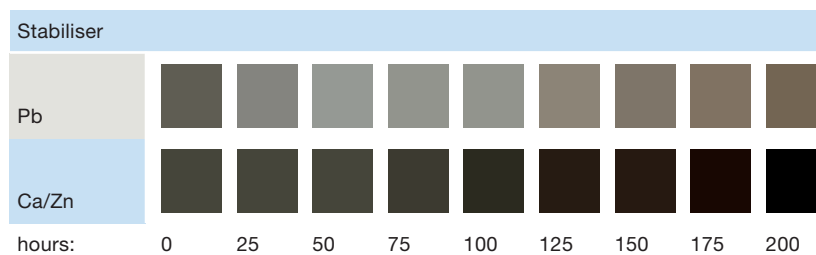
Weathering stability

Baerlocher stabilisers for technical profiles are used in outdoor weatherable shutters and building profiles as well as in the extrusion of cable ducting and furniture profiles. The improved protective effect provided by Calcium/Zinc stabilisers is very clearly visible in dark-pigmented profiles. While dark-pigmented Lead-stabilised profiles gradually fade under the influence of weathering, Calcium/Zinc-stabilised profiles maintain their original colour much longer.

Example 3

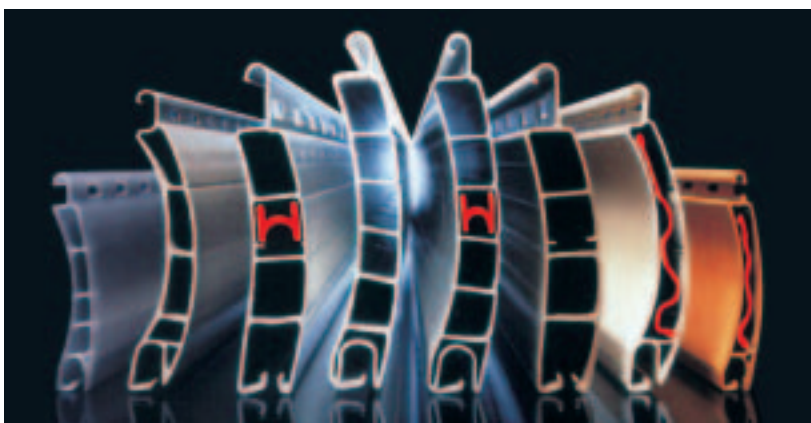
Components	[phr]	[phr]
PVC	100.0	100.0
Filler	10.0	10.0
Pigment	1.7	1.7
Pb stabiliser	4.5	–
Ca/Zn stabiliser	–	3.5

Sun test



The SUN weathering test clearly demonstrates that pigmented Calcium/Zinc-stabilised profiles have better colour hold than Lead-stabilised profiles.

(Colour deviations may occur due to printing variations)

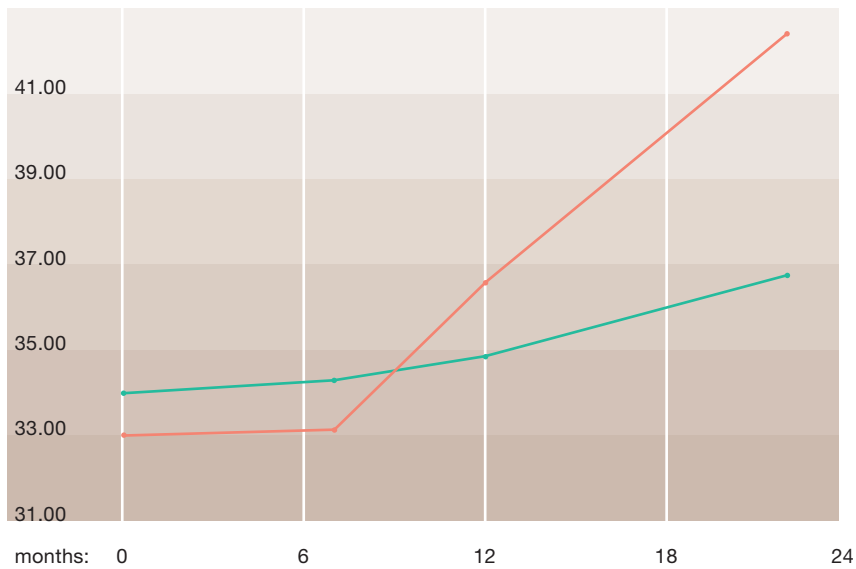


Baerlocher one-packs facilitate manufacturing of high quality profiles for various applications, e.g. roller shutter with different sizes and geometries.

Natural weathering of Calcium/Zinc and Lead-stabilised profiles

Brown profile

brightness [L-value]

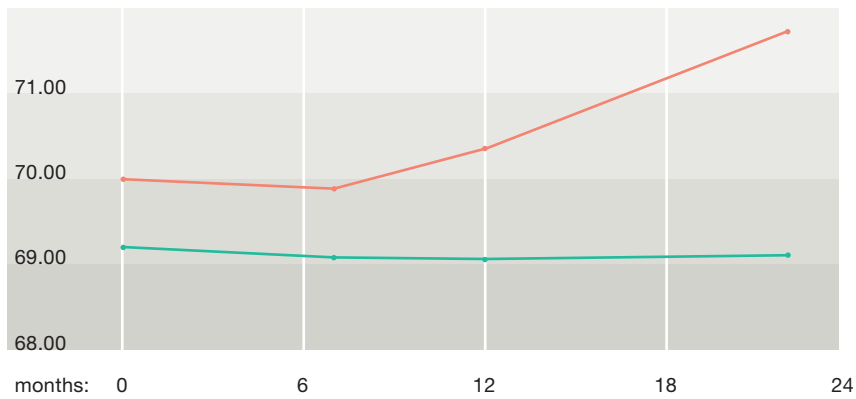


● Ca/Zn system
● Pb system

Calcium/Zinc-stabilised systems show better colour hold during natural weathering in Central Europe. Chalking starts significantly later.

Grey profile

brightness [L-value]



● Ca/Zn system
● Pb system

Supply forms

Baeropan	MC	R	TX	Y	Dosage [phr]	
50870 P	●	●	●	–	approx. 4.1	Pb stabiliser
9418 P	●	●	–	●	approx. 3.2	Ca/Zn stabiliser

MC = powder; R = granules; TX = pellets; Y = extrusion granules

Baerlocher additives extend the weathering stability of gutters.



Research and development

We continuously improve the processing properties and performance characteristics of our stabilisers by way of comprehensive research and development using state-of-the-art equipment. We coordinate our activities closely with our customers in order to offer them tailor-made products to suit their needs.

Together with our customers, suppliers and other companies in the PVC industry we take an integrated approach to our innovative development goals in order to achieve the best possible solutions for our customers.



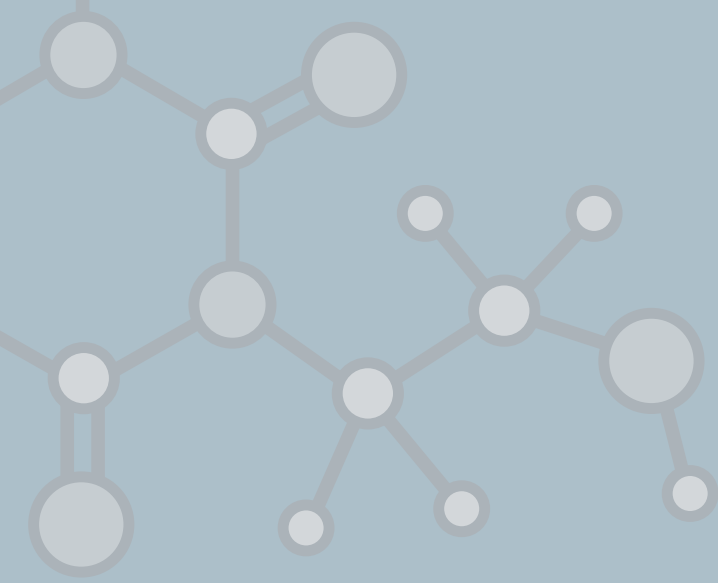
Innovative research and development empowers Baerlocher to supply high-performance stabiliser systems.



Disclaimer

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The following brochures are available:

Baerlocher Additives for PVC

- Additives for PVC (Overview)
- Acrylate Processing Aids and Impact Modifiers
- Lead Stabilisers
- Organotin Stabilisers
- Lubricants
- Window and Technical Profiles
- Cables and Wires
- Calendered Films and Sheets
- Plastisol
- Sheets and Foamed Profiles
- Pipes and Fittings

Baerlocher Additives

- Metallic Stearates

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