

# Additives, Driers, Accelerators & Catalysts

For Coatings, Paints, Composites, Printing Inks & Adhesives



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## HIGH-PERFORMANCE COBALT REPLACEMENT SOLUTIONS

Borchi® OXY-Coat and Borchi® Dragon are lines of cobalt-free curing additives for all types of oxidatively drying resin systems. Benefits include improved drying and non-yellowing performance compared to conventional driers. Borchi® OXY-Coat extends the coatings season window by providing consistent curing performance in all weather conditions (hot or cold, dry or humid) for short, medium and long oil alkyd systems. Borchi® Dragon is specially designed to accelerate dry performance in long oil and high solids alkyd systems; benefits include non-wrinkling with high build films and excellent film hardness. Borchi® OXY-Coat and Borchi® Dragon products meet stringent regulatory requirements as cobalt-free solutions.

Borchers Additive	System*	Chemistry	Description
<b>Borchi® OXY-Coat</b>	W/S	Organo metallic complex	<ul style="list-style-type: none"> <li>Improves drying activity, color performance, gloss and haze compared to cobalt-based driers in water- and solvent-based systems</li> <li>Based on a unique, highly active complex</li> <li>Can be used in coatings for adverse weather conditions</li> </ul>
<b>Borchi® OXY-Coat 1101</b>	W	Organo metallic complex	<ul style="list-style-type: none"> <li>VOC-free; improves drying activity, color performance, gloss and haze compared to cobalt-based driers</li> <li>Based on a unique, highly active complex</li> <li>Can be used in coatings for adverse weather conditions</li> </ul>
<b>Borchi® OXY-Coat 1310</b>	S	Organo metallic complex	<ul style="list-style-type: none"> <li>Recommended for thixotropic solvent-based systems</li> <li>Improves drying activity, color performance, gloss and haze compared to cobalt-based driers</li> <li>Can be used in coatings for adverse weather conditions</li> </ul>
<b>Borchi® Dragon</b>	S	Organo metallic complex	<ul style="list-style-type: none"> <li>Improves drying activity, color performance, gloss and haze compared to cobalt-based driers in solvent-based systems</li> <li>Provides wrinkle-free drying and excellent film hardness in high solids systems</li> </ul>

## ANTI-SKINNING AGENTS

SKINO® (methylethyl ketoxime), Ascinin® (amino compound), Borchi® Nox (cyclohexanone oxime), and Borchi® Shield (amino / oxime compound) products offer formulators a choice in anti-skinning additives. Benefits include flexibility in meeting regulatory requirements for in-can skin formation in alkyd coatings.

Borchers Additive	System*	Chemistry	Description
<b>Ascinin® Anti Skin 0445</b>	W/S	Amino compound dissolved in 1,2-propanediol	<ul style="list-style-type: none"> <li>Phenol- and MEKO-free; recommended to be used with Borchi® OXY-Coat cobalt replacement additives</li> <li>Controls surface dry retardation and keeps the film open longer to ensure deeper penetration of oxygen to lower film layers which promotes through dry and improves flow properties</li> </ul>
<b>Ascinin® Anti Skin 0444</b>	S	Amino compound dissolved in fatty acid ester	<ul style="list-style-type: none"> <li>Phenol- and MEKO-free; recommended to be used with Borchi® OXY-Coat cobalt replacement additives</li> <li>Controls surface dry retardation and keeps the film open longer to ensure deeper penetration of oxygen to lower film layers which promotes through dry and improves flow properties</li> </ul>
<b>Skino® #2</b>	S	Methylethyl ketoxime	<ul style="list-style-type: none"> <li>Exhibits very good anti-skinning action without adversely affecting wrinkle formation</li> <li>Delays the onset of drying of clear lacquers without affecting through-drying</li> </ul>
<b>Borchi® Nox C3</b>	S	Cyclohexanone oxime	<ul style="list-style-type: none"> <li>Anti-skinning agent especially for printing inks</li> </ul>
<b>Ascinin® Anti Skin 1240</b>	S	Amino compound dissolved in fatty acid ester	<ul style="list-style-type: none"> <li>Specially designed for oxidatively drying coatings systems and pastes with reduced VOC content</li> <li>MEKO-free; recommended to be used with Borchi® OXY-Coat cobalt replacement additives</li> </ul>

## ANTI-SKINNING AGENTS (continued)

SKINO® (methylethyl ketoxime), Ascinin® (amino compound), Borchino® Nox (cyclohexanone oxime), and Borchino® Shield (amino / oxime compound) products offer formulators a choice in anti-skinning additives. Benefits include flexibility in meeting regulatory requirements for in-can skin formation in alkyd coatings.

Borchers Additive	System*	Chemistry	Description
<b>Borchino® Nox 1640</b>	S	Cyclohexanone oxime	<ul style="list-style-type: none"> <li>• MEKO replacement</li> <li>• Does not cause discoloration or adversely affect the drying time of the paint system</li> </ul>
<b>Borchino® Shield</b>	S	Amino / oxime compound dissolved in fatty acid ester	<ul style="list-style-type: none"> <li>• Phenol- and MEKO-free, recommended to be used with Borchino® Dragon high-performance catalyst in high solids alkyds</li> <li>• Works synergistically with Borchino® Dragon ligand technology to provide slower surface drying, allowing for proper oxidative through cure even with thicker films</li> </ul>

## CALCIUM DRIERS

Calcium is an auxiliary drier that is used solely in combination with primary and secondary driers. It can also be used as a pigment-wetting agent to prevent loss of surface dry by preferentially being absorbed by pigments.

Family	System*	Chemistry	Concentrations Available
<b>Hydro-Cem</b>	W/S	Octoate	5%
<b>Hex-Cem®</b>	S	Octoate	5%
<b>Cem-All®</b>	S	Blend of Synthetic Acids	6%, 8%, 10%

## IRON DRIERS

Iron is a primary drier that provides oxidative surface curing in coatings. It is efficient only in elevated curing systems such as baking enamels. Use in dark colors only.

Family	System*	Chemistry	Concentrations Available
<b>Hex-Cem®</b>	S	Octoate	12%

## COBALT DRIERS

Cobalt is the most important metal drier for curing coatings based on drying oils and alkyd resins. It is required to shorten the surface drying of coatings, varnishes, stains and inks and, in combination with a secondary drier such as zirconium, aluminum or zinc, will result in uniform drying of the film.

Family	System*	Chemistry	Concentrations Available
Hydro-Cure®	W/S	Neodecanoate / Octoate	5% (II), 10% (IV)
Ten-Cem®	S	Neodecanoate	12%
Hex-Cem®	S	Octoate	6%, 12%
Cem-All®	S	Blend of Synthetic Acids	6%, 12%
Nap-All®	S	Naphthenate	6%
<b>For Inks</b>			
Cem-All® PI	S	Blend of Synthetic Acids	12%
Lin-All® PI	S	Tallate	6%

## MANGANESE DRIERS

Manganese is the second most effective metal after cobalt in making metal carboxylate driers for surface dry in oxidatively-cured systems. It also promotes through dry but can be used with cobalt and secondary driers like zirconium, aluminum or zinc for complete drying of the film.

Family	System*	Chemistry	Concentrations Available
Hydro-Cure®	W/S	Neodecanoate	5%, 9% (III)
Borchers® Dry 0410 US	S	Enhanced Neodecanoate	7%
Borchers® Dry 0411HS US	S	Enhanced Neodecanoate	7%
Hex-Cem®	S	Octoate	12% LC
<b>For Inks</b>			
Lin-All® PI	S	Tallate	6%

## ZIRCONIUM DRIERS

Zirconium is a highly efficient secondary drier. Zirconium driers are the most common secondary driers, improving through dry in oxidatively-cured coatings primarily by the formation of coordination bonds when hydroxyl and carboxyl groups are present.

Family	System*	Chemistry	Concentrations Available
Hydro-Cem	W/S	Octoate	12%
Hex-Cem®	S	Octoate	12%, 18%, 24%

## SPECIALTY DRIERS

Specialty driers fulfill a number of applications to support the cure of oil and alkyd-based binder systems.

Family	System*	Chemistry	Concentrations Available	Description
<b>Oxidative</b>				
Cur-Rx®	S	Octoate	4%	<ul style="list-style-type: none"> <li>High solids/thick film curing</li> </ul>
Cerium Hex-Cem®	S	Octoate	12%	<ul style="list-style-type: none"> <li>Efficient through drier in low temperature applications</li> <li>Promotes oxidative curing</li> </ul>
<b>Through Dry</b>				
AOC E	S	Aluminum	7%	<ul style="list-style-type: none"> <li>Fast through dry for high solids/thick film applications</li> <li>Reduces yellowing</li> </ul>
Rare Earth Hex-Cem®	S	Octoate	8%, 12%	<ul style="list-style-type: none"> <li>Improves low temperature and high humidity cure</li> </ul>
Neo-Cem 250	S	Blend of Synthetic Acids	12%	<ul style="list-style-type: none"> <li>Neodymium-based through drier for high solids and thick film applications</li> </ul>
<b>Auxiliary</b>				
Potassium Hex-Cem®	S	Octoate	15%	<ul style="list-style-type: none"> <li>Used in curing unsaturated polyester resins</li> </ul>
Lithium Ten-Cem® WS	W/S	Neodecanoate	2%	<ul style="list-style-type: none"> <li>Recommended as a trans esterification or alcoholysis catalyst for the production of alkyd and epoxy esters</li> </ul>
<b>Drier Accelerator</b>				
Dri-Rx® HF	W/S	2,2 bipyridyl	30%	<ul style="list-style-type: none"> <li>Chelating agent for primary driers for improved efficiency</li> <li>Improves thick film curing</li> </ul>
<b>Prevent Loss of Dry</b>				
Cobalt Hydroxy Ten-Cem®	S	Neodecanoate	21%	<ul style="list-style-type: none"> <li>Oxidative dry stabilizer for coatings</li> <li>Slowly releases cobalt drier over time</li> </ul>

## ZINC DRIERS

Zinc is a secondary drier that improves the through drying and hardness of the paint film. It can also be used to wet out pigments. Zinc is always used in combination with primary driers (cobalt, manganese, Borchi® OXY-Coat and vanadium compounds).

Family	System*	Chemistry	Concentrations Available
Ten-Cem®	S	Neodecanoate	18%
Hex-Cem®	S	Octoate	12%, 18%, 22%
Cem-All®	S	Blend of Synthetic Acids	16%
Nap-All®	S	Naphthenate	10%, 14.5%

# DRIER RECOMMENDATIONS

Drier Package Recommendations - % Metal based on Vehicle Resin Solids.

Product	Borchi® OXY-Coat 1310	Cobalt Ten-Cem®	Manganese Hex-Cem®	Zirconium Hex-Cem®	Calcium Cem-All®	7% AOC E	Potassium Hex-Cem®	Dri-Rx® HF
<b>Solvent-Based Binder</b>								
<b>Long - High Solids</b>		0.04				0.3		0.1
<b>Cobalt-Free</b>	0.5-3.0			0.2	0.15			
<b>Long</b>		0.06		0.15	0.25			0.2
<b>Cobalt-Free</b>	0.5-3.0				0.2		0.1-0.2	
<b>Medium</b>		0.04		0.15	0.05			0.1
<b>Cobalt-Free</b>	0.5-1.0			0.2	0.15			
<b>Short</b>		0.05		0.1	0.05			
<b>Cobalt-Free</b>	0.5-1.0							
<b>Silicone Modified</b>		0.04		0.03				0.2
<b>Cobalt-Free</b>	0.5-1.0			0.2	0.15			
<b>Urethane Modified</b>		0.04		0.1				0.2
<b>Cobalt-Free</b>	0.5-1.5							
<b>Chain Stopped</b>		0.08		0.4	0.1			
<b>Cobalt-Free</b>	0.5-2.0				0.2			
<b>Drying Oils</b>		0.02	0.02		0.05			
<b>Cobalt-Free</b>	0.5-2.0			0.3	0.1			
<b>Epoxy Ester</b>		0.04	0.04					0.02
<b>Cobalt-Free</b>	1.0-2.0				0.1			

Product	Borchi® OXY-Coat 1101	Cobalt Hydro-Cure® IV	Manganese Hydro-Cure® III LC	Zirconium Hydro-Cem	Calcium Hydro-Cem	Dri-Rx® HF
<b>Water-Based Binder</b>						
<b>Water Dispersible Alkyd</b>		0.05		0.7	0.03	0.1
<b>Cobalt-Free</b>	0.3-1.0			0.3	0.15	0.1
<b>Alkyd Emulsions</b>						
<b>Long</b>		0.07		0.2	0.15	0.1
<b>Cobalt-Free</b>	0.5-3.0			0.2	0.2	
<b>Medium</b>		0.05		0.2	0.2	
<b>Cobalt-Free</b>	0.5-1.0					
<b>Short</b>		0.04			0.1	
<b>Cobalt-Free</b>	0.5-1.0					
<b>Urethane Modified</b>		0.05		0.2		
<b>Cobalt-Free</b>	0.5-2.0					
<b>Chain Stopped</b>		0.04			0.2	
<b>Cobalt-Free</b>	0.5-3.0					
<b>Drying Oils</b>		0.04	0.04	0.3	0.15	
<b>Cobalt-Free</b>	0.5-2.0			0.1		

## WETTING & DISPERSING ADDITIVES

Borchi® Gen dispersants are high-performance additives designed to disperse organic and inorganic pigments. Benefits include better pigment wetting resulting in lower grind times, improved color strength and improved transparency.

Borchers Additive	System*	Chemistry	% Active	Description
<b>Borchi® Gen 0851</b>	W	Polyurethane	50% in water	<ul style="list-style-type: none"> <li>VOC- and APEO-free; specially designed for dispersing difficult organic pigments and carbon black in water-based systems</li> <li>Provides low viscosity dispersions, high transparency with organic pigments, high jetness with carbon black and long-term dispersion stability</li> </ul>
<b>Borchi® Gen SN 95</b>	W	Polyurethane	25% in water	<ul style="list-style-type: none"> <li>Specially designed for dispersing difficult organic pigments and carbon black in water-based systems</li> <li>Provides low viscosity dispersions, high transparency with organic pigments, high jetness with carbon black and long-term dispersion stability</li> </ul>
<b>Borchi® Gen WNS</b>	W	Low molecular weight polyether modified compounds	90% in water	<ul style="list-style-type: none"> <li>VOC- and APEO-free; recommended for water- or glycol-based universal tinting pastes</li> <li>Provides strong color development with organic pigments and improved storage stability</li> </ul>
<b>Borchi® Gen DFN</b>	W/S	Low molecular weight polyether modified compounds	100%	<ul style="list-style-type: none"> <li>VOC- and APEO-free; recommended for organic pigments and carbon black in water- and solvent-based systems</li> <li>Provides improved pigment wetting and stabilization of the consistency and color strength of finished coatings</li> </ul>
<b>Borchi® Gen 12</b>	W/S	Low molecular weight polyether modified compounds	100%	<ul style="list-style-type: none"> <li>VOC- and APEO-free; recommended for systems based on CAB and nitrocellulose</li> <li>Improves pigment wetting and dispersion time and has OH functionality that can be covalently bonded in cross-linked or two-component water- and solvent-based coatings systems</li> </ul>
<b>Borchi® Gen 0650</b>	W/S	Amine neutralized phosphoric acid ester	100%	<ul style="list-style-type: none"> <li>VOC- and APEO-free; specially designed for stabilizing fillers and pigments with polar surfaces like titanium dioxide, iron oxides and hydrophilic organic pigments in water- and solvent-based systems</li> <li>Provides low viscosity dispersions; may significantly improve the color of tinted white and clear alkyd-based coatings</li> </ul>
<b>Borchi® Gen 0451</b>	W/S	Polyurethane	100%	<ul style="list-style-type: none"> <li>VOC- and APEO-free; specially designed for dispersing difficult to disperse organic pigments and carbon black in water- and solvent-based systems</li> <li>Provides low viscosity dispersions, high transparency with organic pigments and long-term dispersion stability</li> </ul>
<b>Borchi® Gen 1252</b>	W/S	Acrylic ester copolymer	100%	<ul style="list-style-type: none"> <li>VOC- and APEO-free; recommended for titanium dioxide, iron oxide and other inorganic pigments and fillers in water- and solvent-based coatings systems</li> <li>Provides high tint strength and contrast ratios, as well as stable dispersion with excellent color development for iron oxide pigments</li> </ul>
<b>Borchi® Gen 0755</b>	W/S	Polyurethane	100%	<ul style="list-style-type: none"> <li>VOC- and APEO-free; recommended for dispersing difficult organic pigments and carbon black in solvent-based systems; broad compatibility; can be used in nitrocellulose</li> <li>Provides low viscosity dispersions, high transparency with organic pigments, high jetness with carbon black and long-term dispersion stability</li> </ul>
<b>Borchi® Gen 911</b>	S	Modified polyester	70% in white spirits	<ul style="list-style-type: none"> <li>Recommended for alkyd solvent-based coatings, as well as nitrocellulose-based systems</li> <li>Provides improved pigment wetting, shorter dispersion time of organic and inorganic pigments and good storage stability of the finished paint</li> </ul>

## WETTING & DISPERSING ADDITIVES (continued)

Borchi® Gen dispersants are high-performance additives designed to disperse organic and inorganic pigments. Benefits include better pigment wetting resulting in lower grind times, improved color strength and improved transparency.

Borchers Additive	System*	Chemistry	% Active	Description
<b>Borchi® Gen 1051</b>	S	Polyurethane	45% in BAC/MPA	<ul style="list-style-type: none"> <li>• Specially designed for dispersing organic blue, green and red pigments in solvent-based systems</li> <li>• Provides low viscosity dispersions, high transparency and long-term dispersion stability</li> </ul>
<b>Borchi® Gen 1251</b>	S	Polyurethane	85% in MPA	<ul style="list-style-type: none"> <li>• Provides excellent pigment wetting, color development and high gloss, as well as low viscosity dispersions and long-term dispersion stability</li> <li>• Recommended for organic pigments and carbon black in solvent-based systems</li> </ul>
<b>Borchi® Gen 1451</b>	S	Polyurethane	30% in EGDA	<ul style="list-style-type: none"> <li>• APEO-free; specially designed for dispersing difficult organic pigments and carbon black in solvent-based systems</li> <li>• Provides low viscosity dispersions, high transparency with organic pigments, high performance with carbon black and long-term dispersion stability</li> </ul>
<b>Borchi® Gen 1452</b>	S	Polyurethane	45% in EGDA	<ul style="list-style-type: none"> <li>• APEO-free; specially designed for dispersing difficult organic pigments and carbon black in solvent-based systems</li> <li>• Provides low viscosity dispersions, high transparency with organic pigments and long-term dispersion stability</li> </ul>
<b>Borchi® Gen 1750</b>	W	Polyurethane	40% in water	<ul style="list-style-type: none"> <li>• VOC-free; specially designed for dispersing and stabilizing transparent iron oxide pigments</li> <li>• Low viscosity grinds allow for up to 40% pigment loading with transparent iron oxide pigments and over 60% with opaque iron oxides</li> </ul>
<b>Spurso®</b>	S	Modified alkyd resin	70% in mineral spirits	<ul style="list-style-type: none"> <li>• Provides strong color development with organic pigments and improved storage stability</li> <li>• Provides improved pigment stability and gloss, as well as reductions in dispersion times, discoloration in white enamels and pigment flooding and floating</li> </ul>
<b>Borchi® Gen 1757</b>	W/S	Copolymer with pigment affinic groups	100%	<ul style="list-style-type: none"> <li>• VOC-free; hybrid wetting and dispersing additive providing a combination of various principles of pigment stabilization</li> <li>• Produces vibrant color and superior opacity with a wide range of bismuth vanadate pigments</li> </ul>

## COLOR BOOST

Borchi® Boost additives improve color acceptance for ready made dispersions and tinting systems. Benefits include stronger tints with the convenience of a post add solution in a wide range of base paints. VOC- and APEO-free.

Borchers Additive	System*	% Active	Description
<b>Borchi® Boost 510W</b>	W	50% in water	<ul style="list-style-type: none"> <li>• Improves color acceptance in medium to low polarity systems</li> <li>• Provides stronger tints with organic pigment dispersions and carbon blacks</li> </ul>
<b>Borchi® Boost 570WS</b>	W/S	100%	<ul style="list-style-type: none"> <li>• Improves color acceptance in medium to low polarity systems</li> <li>• Provides stronger tints with organic pigment dispersions and carbon blacks</li> </ul>
<b>Borchi® Boost 540WS</b>	W/S	100%	<ul style="list-style-type: none"> <li>• Improves color acceptance in medium to high polarity systems</li> <li>• Provides stronger tints with organic pigment dispersions and carbon blacks</li> </ul>



## COMPATIBILIZERS

Borchi® Add products improve compatibility of universal water-based concentrates in solvent-based alkyd base paints. Benefits include improved color acceptance and reduced pigment flooding and floating as a post add solution. VOC- and APEO-free.

Borchers Additive	System*	% Active	Description
<b>Borchi® Add 406WS</b>	W/S	90% in water	<ul style="list-style-type: none"> <li>Reduces or eliminates rub-out of universal water-based concentrates in solvent-based alkyd bases</li> <li>Improves compatibility</li> </ul>
<b>Borchi® Add 409WS</b>	W/S	100%	<ul style="list-style-type: none"> <li>Reduces or eliminates rub-out of universal water-based concentrates in solvent-based alkyd bases</li> <li>Improves compatibility</li> </ul>

## RHEOLOGY MODIFIERS

Borchi® Gel additives are associative and non-associative rheology modifiers for water-based coatings that have a significant influence on the storage stability and application properties of the coatings system. Benefits include a full range of low to high shear polyurethane, acrylic and zirconium complex thickeners to ensure optimal flow and leveling combined with anti-sag performance.

Borchers Additive	System*	Functionality	% Active	Description
<b>Polyurethane (PU) Based Associative Thickeners</b>				
<b>Borchi® Gel 0620</b>	W	Low shear/ very strongly pseudoplastic	40% in water/ butyl glycol (40% PU)	<ul style="list-style-type: none"> <li>Tin-, APEO- and emulsifier-free; develops viscosity stability and improves rheological properties mainly in the lower shear range for water-based systems</li> <li>Enables the application of thick layers on vertical surfaces, effectively prevents sagging and does not yellow or cause chalking in the cured film</li> </ul>
<b>Borchi® Gel 0621</b>	W	Low shear/ very strongly pseudoplastic	30% in water (20% PU)	<ul style="list-style-type: none"> <li>Tin-, VOC- and APEO-free; develops viscosity stability and improves rheological properties mainly in the low shear range for water-based systems</li> <li>Enables application of thick layers on vertical surfaces, effectively prevents sagging and does not yellow or cause chalking in the cured film</li> </ul>
<b>Borchi® Gel PW 25</b>	W	Low shear/ strongly pseudoplastic	25% in water/ propylene glycol (25% PU)	<ul style="list-style-type: none"> <li>Emulsifier-free; exceptionally good thickening properties in most fine particle dispersion binders with low emulsifier content in water-based systems</li> <li>Promotes longer open times than normal due to its high capacity for water retention</li> </ul>
<b>Borchi® Gel LW 44</b>	W	Low shear/ strongly pseudoplastic	46% in water (24% PU)	<ul style="list-style-type: none"> <li>VOC- and APEO-free; develops viscosity stability mainly in the low shear range for water-based coatings systems</li> <li>Will not cause yellowing or chalking in cured film</li> </ul>
<b>Borchi® Gel THIX 921</b>	W	Low shear/ pseudoplastic	32% in water (25% PU)	<ul style="list-style-type: none"> <li>Thixotropic and shear thinning in behavior</li> <li>Contributes to obtaining enhanced storage stability for coatings and enhances leveling and application properties of paint formulations</li> </ul>
<b>Borchi® Gel 0625</b>	W	Medium shear/ pseudoplastic	34% in water (25% PU)	<ul style="list-style-type: none"> <li>VOC- and APEO-free; develops viscosity stability and improves rheological properties mainly in the medium and high shear range for water-based systems</li> <li>Improves storage stability, leveling and application properties</li> </ul>
<b>Borchi® Gel L 75 N</b>	W	Medium shear/ pseudoplastic	50% in water (25% PU)	<ul style="list-style-type: none"> <li>VOC- and APEO-free; develops viscosity stability in water-based coatings mainly in the medium shear range; good pigment wetting properties</li> <li>Improves properties for easier brush and roller application and does not yellow or cause chalking in the cured film</li> </ul>

## RHEOLOGY MODIFIERS (continued)

Borchi® Gel additives are associative and non-associative rheology modifiers for water-based coatings that have a significant influence on the storage stability and application properties of the coatings system. Benefits include a full range of low to high shear polyurethane, acrylic and zirconium complex thickeners to ensure optimal flow and leveling combined with anti-sag performance.

Borchers Additive	System*	Functionality	% Active	Description
<b>Polyurethane (PU) Based Associative Thickeners</b>				
<b>Borchi® Gel L 76</b>	W	Medium shear/ pseudoplastic	50% in water (25% PU)	<ul style="list-style-type: none"> <li>Improves rheological properties of aqueous coatings systems, allowing for easier application of paint with brush or roller, especially for emulsion paints</li> </ul>
<b>Borchi® Gel 0626</b>	W	Medium shear/ pseudoplastic	37% in water (25% PU)	<ul style="list-style-type: none"> <li>Develops viscosity stability and improves rheological properties mainly in the medium and high shear range for water-based systems</li> <li>Improves storage stability, leveling and application properties</li> </ul>
<b>Borchi® Gel 0434</b>	W	High shear/ newtonian	20% in water (20% PU)	<ul style="list-style-type: none"> <li>VOC- and APEO-free; recommended for latex dispersions and water-based coatings systems in the high shear range</li> <li>Improves brush drag (ICI viscosity), reduces spattering during roller application, and imparts superior flow and leveling</li> </ul>
<b>Borchi® Gel 0435</b>	W	High shear/ newtonian	50% in water (30% PU)	<ul style="list-style-type: none"> <li>APEO-free; develops outstanding brush and roll application properties and high shear thixotropy for water-based systems</li> <li>Produces viscosity stability mainly in the higher shear range</li> </ul>
<b>Other Rheology Modifiers</b>				
<b>Borchi® Gel A LA</b>	W	Low shear/ strongly pseudoplastic	10% anionic acrylate polymer in water	<ul style="list-style-type: none"> <li>APEO-free; improves flow and leveling properties of water-based coatings systems mainly in high gloss emulsions</li> <li>Builds viscosity in the low shear range and swells water in the coating rather than associating it with binders</li> </ul>
<b>Borchi® Gel PN</b>	W	Low shear/ strongly pseudoplastic	Zirconium complex neutralized with ammonia	<ul style="list-style-type: none"> <li>VOC-, emulsifier- and APEO-free; thixotropic additive for use in water-based coatings systems whose binders contain free hydroxyl and carboxyl groups</li> <li>Develops viscosity in the low shear range; prevents sagging and settling; improves viscosity stability of a coating after tinting with universal colorants; no need for biocides</li> </ul>
<b>Borchi® Gel NA</b>	W	Low shear/ strongly pseudoplastic	Zirconium complex neutralized with sodium hydroxide	<ul style="list-style-type: none"> <li>VOC-, emulsifier- and APEO-free; thixotropic and shear thinning in behavior; additive for use in water-based coatings systems whose binders contain free hydroxyl and carboxyl groups</li> <li>Improves viscosity stability of a coating after tinting with universal colorants; does not contain any odor</li> </ul>
<b>Borchi® Set 134</b>	S	Low shear/ strongly pseudoplastic	35% in modified alkyd resin and solvent mixture	<ul style="list-style-type: none"> <li>Anti-settling agent for solvent-based systems containing dense pigments</li> <li>Inhibits the hard settling of coatings and easily incorporated with high shear dispersing equipment</li> </ul>

## FLOW & LEVELING ADDITIVES

Borchi® Gol high-performance flow and leveling additives are modified polydimethylsiloxane (PDMS) and acrylic additives which reduce the surface tension of the coating to improve flow, substrate wetting and slip. Benefits include the elimination of surface defects such as fish eyes and cratering. Many surface defects are related to surface tension, and by correcting the surface tension of a system, most surface defects can be resolved.

Borchers Additive	System*	Chemistry	% Active	Description
<b>Borchi® Gol 1570</b>	W/S	Polyether modified polysiloxane (PDMS)	100%	<ul style="list-style-type: none"> <li>Improves substrate wetting on challenging surfaces or dirty substrates, and enhances slip properties when used in combination with Borchi® Gol LA 2 or Borchi® Gol LA 232</li> <li>Inhibits the formation of surface defects like craters and pinholes</li> </ul>
<b>Borchi® Gol 1375</b>	W/S	Silicone-free mixture of ethoxylated alcohols and surfactants	N/A	<ul style="list-style-type: none"> <li>VOC- and APEO-free; recommended for challenging surfaces and dirty substrates in water- and solvent-based systems</li> <li>Provides reductions in surface tension, improvements in the wetting process and low-foaming tendencies in formulations</li> </ul>
<b>Borchi® Gol LA 2</b>	W/S	Solvent-free polyether modified polysiloxane (PDMS)	100%	<ul style="list-style-type: none"> <li>VOC-free; provides lowered surface tension as well as mar, scratch and block resistance</li> <li>Inhibits the formation of surface defects and improves final film appearance</li> </ul>
<b>Borchi® Gol LA 50</b>	W/S	Polyether modified polysiloxane (PDMS)	50% in dipropylene glycol monobutyl ether	<ul style="list-style-type: none"> <li>Lowers surface tension and inhibits the formation of surface defects in non-polar surfaces</li> <li>Can be used in conjunction with Borchi® Gol LA 2 for better slip</li> </ul>
<b>Borchi® Gol LA 200</b>	W/S	Solvent-free polyether modified polysiloxane (PDMS)	100%	<ul style="list-style-type: none"> <li>VOC-free; provides improvements in substrate wetting and block and scratch resistance</li> <li>Quickly removes air bubbles from applied coated surfaces and avoids micro foam formation at all production stages</li> </ul>
<b>Borchi® Gol LA 232</b>	W/S	Solvent-free polyether modified polysiloxane (PDMS)	100%	<ul style="list-style-type: none"> <li>VOC-free; provides reductions in surface tension, increases in surface slip and improvements in block and scratch resistance</li> <li>Quickly removes air bubbles from applied films to provide smooth surfaces</li> </ul>
<b>Borchi® Gol 3467</b>	W/S	Solvent-free polyether modified polysiloxane (PDMS)	100%	<ul style="list-style-type: none"> <li>VOC-free; suitable for clear and pigmented systems, hydrophobic surfaces and water- and solvent-based formulations in wood substrates</li> <li>Provides improvements in substrate wetting, and wetting of difficult to wet and dirt contaminated substrates</li> </ul>
<b>Borchi® Gol OL 44</b>	W/S	Solvent-free polyether modified polysiloxane (PDMS)	100%	<ul style="list-style-type: none"> <li>VOC-free; broad compatibility; eliminates craters and uneven film applications</li> <li>Increases and improves slip properties with no recoatability issues</li> </ul>
<b>Borchi® Gol 8701</b>	S	Silicone-free	50% in methoxypropyl acetate	<ul style="list-style-type: none"> <li>Specially designed for solvent-based coatings systems</li> <li>Provides improvement in substrate wetting and flow, as well as excellent slip without inter-coat adhesion interference</li> </ul>
<b>Borchi® Gol LAC 80</b>	W/S	Solvent-free polyether modified polysiloxane (PDMS)	100%	<ul style="list-style-type: none"> <li>VOC-free; provides excellent flow and a clear increase in the surface smoothness of paint films; good block resistance</li> <li>Prevents crater formation and largely prevents bleeding in hammer finishes</li> </ul>
<b>Borchi® Gol 1473</b>	W/S	Solvent-free polyether modified polysiloxane (PDMS)	100%	<ul style="list-style-type: none"> <li>VOC-free; recommended for top coats that are cured at room temperature and below 150 °C in solvent- and water-based systems, as well as solvent-free systems</li> <li>Provides improvements in surface smoothness by reducing orange peel and preventing the formation of craters</li> </ul>

## FLOW & LEVELING ADDITIVES (continued)

Borchi® Gol high-performance flow and leveling additives are modified polydimethylsiloxane (PDMS) and acrylic additives which reduce the surface tension of the coating to improve flow, substrate wetting and slip. Benefits include the elimination of surface defects such as fish eyes and cratering. Many surface defects are related to surface tension, and by correcting the surface tension of a system, most surface defects can be resolved.

Borchers Additive	System*	Chemistry	% Active	Description
<b>Borchi® Gol 1474</b>	W/S	Solvent-free polyether modified polysiloxane (PDMS)	100%	<ul style="list-style-type: none"> <li>VOC-free; provides improvements in flow, leveling and slip properties as well as mar resistance</li> <li>Inhibits the formation of surface defects like craters and pin holes</li> </ul>
<b>Borchi® Gol H 250</b>	S	Phenyl modified polysiloxane (PDMS)	50% in xylene/ butanol	<ul style="list-style-type: none"> <li>Provides improvements in leveling of baking enamels</li> <li>Stable up to 250 °C</li> </ul>
<b>Borchi® Gol PL</b>	S	Solvent-free phenyl modified polysiloxane (PDMS)	100%	<ul style="list-style-type: none"> <li>VOC-free; eliminates craters and other surface defects characterized by poor flow in can and coil coatings; stable up to 300 °C</li> <li>Effective flow promoter and compatible with numerous organic binders</li> </ul>
<b>Borchi® Gol M 51</b>	S	Polyether modified polysiloxane (PDMS)	100%	<ul style="list-style-type: none"> <li>VOC-free; provides reductions in surface tension and enhanced flow</li> <li>Counteracts surface defects caused by silicone-based additives</li> </ul>
<b>Borchi® Gol LA 6</b>	S	Polyether modified polysiloxane (PDMS)	12% in xylene	<ul style="list-style-type: none"> <li>Provides enhanced substrate wetting, lowered surface tension and block and slip resistance</li> <li>Inhibits the formation of surface defects</li> </ul>

## DEFOAMERS

Borchers offers high-performance modified polydimethylsiloxane (PDMS) and non-silicone defoamers for water- and solvent-based coating and paint systems. Our products eliminate foaming in the pumping, stirring, and grinding processes during production as well as the formation of foam when brushing, rolling, or spraying upon application.

Borchers Additive	System*	Chemistry	% Active	Description
<b>Borchi® Burst DFM 100</b>	W	Mineral Hydrocarbons, silica, and surface active materials	99%	<ul style="list-style-type: none"> <li>Excellent defoamer for low to high PVC systems as well as some low gloss paints, paper coatings, and plasters</li> </ul>
<b>Borchi® Burst DFM 200</b>	W	Mineral Hydrocarbons and surface active materials	99%	<ul style="list-style-type: none"> <li>Excellent defoamer for low to high PVC paints, automotive spray booth effluent systems, and adhesives and polymer latex systems</li> </ul>
<b>Borchi® Burst DF 300</b>	W	Silicone-free polymers	99%	<ul style="list-style-type: none"> <li>Solvent- and silicone-free foam control agent</li> <li>Excellent defoamer for gloss paints, wood coatings, pigment dispersions, and matt and silk paints</li> </ul>
<b>Borchi® Burst DFS 500</b>	W/S	Modified silicones SVHC Label free	100%	<ul style="list-style-type: none"> <li>Very successfully eliminates foam in the production of inks and pigment dispersions</li> <li>Excellent defoamer for solvent-based and solvent-free wood coatings and varnishes</li> </ul>
<b>Borchi® Burst DFS 600</b>	W	Emulsion of modified silicones	21%	<ul style="list-style-type: none"> <li>Excellent defoamer for water-based gloss paints and wood coatings</li> <li>Can be used in adhesives, inks, and polymer latex systems</li> </ul>
<b>Borchi® Gol LA 200</b>	W/S	Polyether modified polysiloxane	100%	<ul style="list-style-type: none"> <li>VOC-free; provides improvements in substrate wetting and block and scratch resistance</li> <li>Supports quick air release of entrapped air in the surface during application</li> </ul>

## DEFOAMERS (continued)

Borchers offers high-performance modified polydimethylsiloxane (PDMS) and non-silicone defoamers for water- and solvent-based coating and paint systems. Our products eliminate foaming in the pumping, stirring, and grinding processes during production as well as the formation of foam when brushing, rolling, or spraying upon application.

Borchers Additive	System*	Chemistry	% Active	Description
<b>Borchers® AF 1171</b>	W/S	Modified polysiloxane with hydrophobic particles	>98%	<ul style="list-style-type: none"> <li>Prevents foaming during paint production</li> <li>Particularly suitable for millbase defoaming for aqueous decorative and general industrial coatings</li> </ul>
<b>Borchers® AF T</b>	W/S	Silicone-free tri-n-butyl phosphate	N/A	<ul style="list-style-type: none"> <li>Destroys foam and prevents foam formation</li> <li>Ideal for improving wettability of adhesives</li> </ul>
<b>Borchers® AF 1270</b>	S	Fluorinated organo-modified polysiloxane	2% in butyl acetate	<ul style="list-style-type: none"> <li>Recommended for solvent-based epoxies, unsaturated polyesters, two-component polyurethane systems, alkyds and UV systems</li> <li>Supports fast air release of entrapped air on the film surface</li> </ul>
<b>Borchi® Gol E2</b>	S	Silicone-free hydrocarbon resins	100%	<ul style="list-style-type: none"> <li>Helps eliminate flow defects and craters caused by air entrapment</li> </ul>
<b>Borchi® Gol 0011</b>	S	Polysiloxane modified preparation of fatty acid esters	100%	<ul style="list-style-type: none"> <li>Reduces pigment floating and provides barrier properties to cured film</li> <li>Suitable for high-build systems; can be used in combination with Borchi® Gol E2 in epoxies for improved flow and deaeration</li> </ul>
<b>Borchi® Gol 1470</b>	S	Silicone-free solution of foam destroying polymers	37% in aromatic petroleum solvent	<ul style="list-style-type: none"> <li>Helps eliminate flow defects and craters caused by air entrapment</li> <li>Can be used in solvent-free and solvent-based one- and two-component industrial coatings and sealants</li> </ul>

## CATALYSTS

Metal carboxylates for urethanes and rubber adhesion.

Product Name	System*	Chemistry	Description
<b>Polyurethane</b>			
<b>Borchers® LH 10</b>	W	Aqueous Emulsion (DBTL)	<ul style="list-style-type: none"> <li>Specially designed for water-based two-component polyurethane coatings</li> <li>Accelerates the cross-linking process and improves the drying of chemically curing systems</li> </ul>
<b>15% Potassium Hex-Cem®</b>	S	Octoate	<ul style="list-style-type: none"> <li>Specially designed for unsaturated polyesters and pot life stabilizers for two-component polyurethane systems</li> <li>Capable of stabilizing the rheological and pot life behavior of water-based two-component polyurethane systems and decreasing discoloration of UPS systems caused by cobalt</li> </ul>
<b>10% Potassium Acetate</b>	S	Acetate	<ul style="list-style-type: none"> <li>Specially designed for polyurethane rigid foam systems</li> </ul>
<b>Dibutyltin Dilaurate</b>	S	Laurate	<ul style="list-style-type: none"> <li>Suitable to accelerate the cross-linking process of solvent-based two-component polyurethane coatings</li> <li>Improves the drying of chemically curing systems favoring the isocyanate/polyol reaction over other side reactions such as isocyanate/water</li> </ul>

## CATALYSTS (continued)

Metal carboxylates for urethanes and rubber adhesion.

Product Name	System*	Chemistry	Description
<b>Polyurethane</b>			
<b>Borchi® Kat 24</b>	S	Bismuth Octoate	<ul style="list-style-type: none"> <li>• Solvent-free; specially designed for one- and two-component polyurethane systems</li> <li>• Accelerates the chemical reaction between the alcohol and isocyanate component of polyurethane coatings systems, thus allowing optimum control of the drying properties</li> </ul>
<b>Borchi® Kat 315</b>	S	Bismuth Neodecanoate	<ul style="list-style-type: none"> <li>• Solvent-free; specially designed for one- and two-component polyurethane systems and RTV silicones</li> <li>• Accelerates the chemical reaction between the polyol and isocyanate component of polyurethane foam systems</li> </ul>
<b>Borchi® Kat 320</b>	S	Bismuth Octoate	<ul style="list-style-type: none"> <li>• Specially designed for one- and two-component polyurethane systems and RTV silicones</li> <li>• Accelerates the chemical reaction between the polyol and isocyanate component of polyurethane foam systems</li> </ul>
<b>Borchi® Kat 0243</b>	S	Bismuth/Lithium Neodecanoate	<ul style="list-style-type: none"> <li>• Specially designed for two-component solvent-based polyurethane coatings</li> <li>• Accelerates the chemical reaction between the alcohol and isocyanate component of polyurethane coatings systems, thus allowing optimum control of the drying properties</li> </ul>
<b>Borchi® Kat 30N</b>	S	Bismuth Naphthenate	<ul style="list-style-type: none"> <li>• Proprietary tin-free catalyst</li> </ul>
Product	Physical Form	Chemistry	Description
<b>Rubber Adhesion Promoters, Solvent-Free Oxygen Scavengers</b>			
<b>14.2% Cobalt Neodecanoate</b>	Liquid	Neodecanoate	<ul style="list-style-type: none"> <li>• Improves the bonding of rubber to metal</li> <li>• Acts as an oxygen scavenger in various applications</li> </ul>
<b>20.5% Cobalt Neodecanoate</b>	Pastille	Neodecanoate	<ul style="list-style-type: none"> <li>• Improves the bonding of rubber to metal</li> <li>• Acts as an oxygen scavenger in various applications</li> </ul>
<b>9.5% Cobalt Stearate</b>	Pastille	Stearate	<ul style="list-style-type: none"> <li>• Improves the bonding of rubber to metal</li> <li>• Acts as an oxygen scavenger in various applications</li> </ul>

## MOISTURE SCAVENGERS

Additive OF and Additive TI are 100% active moisture scavenger products. Benefits include improved storage stability and dehydrating pigments, fillers and solvents in the production process of 1K and 2K polyurethane systems.

Borchers Additive	System*	Chemistry	% Active	Description
<b>Additive OF</b>	S	Triethyl ortho formate	100%	<ul style="list-style-type: none"> <li>• Eliminates moisture in solvent-based one- and two-component polyurethane coatings during shelf life</li> <li>• Compatible with most polyol and isocyanate components</li> </ul>
<b>Additive TI</b>	S	P-toluene sulfonyl isocyanate	100%	<ul style="list-style-type: none"> <li>• Removes moisture introduced with solvents, pigments and fillers in one- and two-component polyurethane systems in production</li> <li>• Low viscosity, monofunctional isocyanate which chemically reacts with water to form an inert amide</li> </ul>

## SPECIALTIES

The specialties line of additives contains essential products for coatings formulations. These include, among others: adhesion promoters, pot life stabilizers and nano-silica dispersions.

Borchers Additive	System*	Chemistry	% Active	Description
<b>Adhesion Promoters</b>				
<b>Borchi® Gen HMP-F</b>	W/S	Oil-free polyester resin	80% in solvent mixture	<ul style="list-style-type: none"> <li>Recommended for baking finishes in water- and solvent-based systems</li> <li>Improves adhesion to metal in reactive coatings</li> </ul>
<b>Borchi® Gen HE</b>	S	Oil-free polyester resin	60% in xylene	<ul style="list-style-type: none"> <li>Recommended for baking finishes in solvent-based systems</li> <li>Improves adhesion and long-term elasticity of coatings on metal substrates and adhesion of metallic pigments in paints</li> </ul>
<b>Anti-Blocking Agents</b>				
<b>Borchi® Coll 10</b>	W	Colloidal dispersion of silica	30% in water	<ul style="list-style-type: none"> <li>Particle size 9 nm</li> <li>Best transparency and effectiveness; maximum matting effect; improves surface hardness at low film builds</li> </ul>
<b>Borchi® Coll 20</b>	W	Colloidal dispersion of silica	30% in water	<ul style="list-style-type: none"> <li>Particle size 18 nm</li> <li>Low matting effect; improves surface hardness at low film builds</li> </ul>
<b>Pot Life Stabilizers</b>				
<b>Regulator ZL</b>	S	Acidic cation exchanger	N/A	<ul style="list-style-type: none"> <li>Highly acidic cation exchanger specially designed for solvent-free two-component polyurethane paints</li> <li>Alkaline fillers may (by catalytic action) shorten the application time of solvent-free two-component polyurethane systems - Regulator ZL can be added as a cation exchanger in order to counteract this</li> </ul>
<b>Anticorrosive</b>				
<b>Bayoxide® Z active</b>	W/S	Zinc Oxide	100%	<ul style="list-style-type: none"> <li>Increases through drying for additives and topcoats and improves corrosion protection behavior and hardness</li> <li>Reduces yellowing</li> </ul>

## COMPOSITE ADDITIVES

Borchers provides accelerators, controllers and enhancers for the composites market. These products promote the polymerization of unsaturated polyester and vinyl ester resins by decomposing organic peroxides at room temperature for crosslinking.

Product	System*	Chemistry	% Active	Description
<b>Borchi® D-1152</b>	S	Solution of amine and ester-containing compounds	52% in naphtha (petroleum; hydrotreated, heavy)	<ul style="list-style-type: none"> <li>Specially formulated for use with ambient cured unsaturated polyester and vinyl ester resins</li> <li>Provides improved wetting and viscosity reduction for a wide range of fillers, reduced settling during storage and applications, shorter paste mixing time and higher filler loading</li> </ul>

# borchers

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In this brochure you will find an overview of our additives for coatings, paints, composites, printing inks and adhesives.

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The Milliken logo is written in a white, cursive script font. The background of the entire page is a vibrant, abstract splash of colorful powder in shades of red, orange, green, and blue against a dark background.