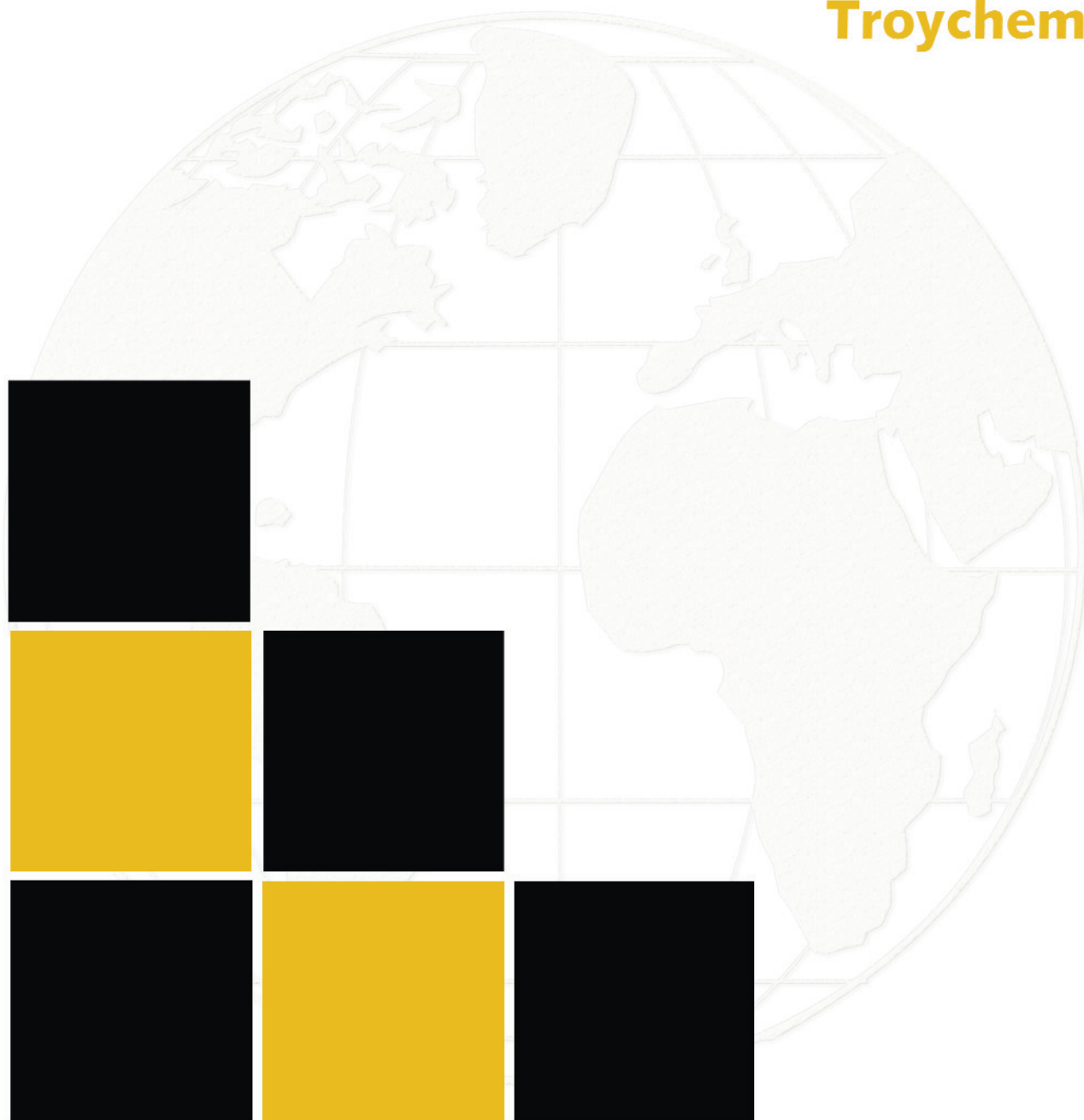


Metal Carboxylates & Anti-Skinning Agents

Troymax™
Troychem™



Performance Products... Worldwide

Metal Carboxylates & Anti-Skinning Agents

Element	Symbol	Typical use level % metal per resin solids	Description
Barium	Ba	0.02	Barium carboxylates improve through-drying of a coating and have good pigment wetting characteristics. They also demonstrate lower water sensitivity than Calcium carboxylates.
Bismuth	Bi	0.20	Bismuth is used as a substitute for lead. It strongly activates cobalt and improves through-drying properties and drying under adverse weather conditions (like Calcium does). Bismuth carboxylates are used in baking finishes to improve the hardness.
Calcium	Ca	0.04	Calcium carboxylates, by themselves, have minimal effectiveness as driers but are very useful when used in combination with active driers such as Cobalt and Manganese. Calcium driers help to improve hardness and gloss as well as to reduce skin-formation, silking, and blooming. They are also useful as pigment wetting/dispersing agents and loss-of-dry inhibitors. Calcium carboxylates are not recommended for coatings subjected to drying under adverse conditions.
Cobalt	Co	0.04	Cobalt carboxylates are the most effective oxidative catalysts at ambient temperatures. Cobalt driers produce fast surface dry to the film. They also are effective as accelerators for peroxide-initiated polyesters and epoxies.
Copper	Cu	0.15	Copper carboxylates possess some catalytic activity in polyesters and epoxy systems, but the principal use of copper metal-soaps is for fungicidal control.
Cerium	Ce	0.15	Cerium carboxylates promote the polymerization and through-drying processes. Cerium carboxylates are particularly recommended for baking enamels and white and clear overprint varnishes, as they produce less discoloration than other active metals.
Iron	Fe	0.15	Iron carboxylates are primarily used in dark baking enamels where maximum hardness is required. Normally, it only becomes catalytically active at temperatures over 130°C.
Lanthanum	La	0.15	Lanthanum carboxylates promote the polymerization and through-drying processes. These types of driers are particularly recommended for baking enamels and white and clear overprint varnishes, as they produce the least discoloration of all active metals. Lanthanum carboxylates are especially useful for alkyd and epoxy resins or combinations of both with amine resins.
Lead	Pb	0.35	In contrast to Cobalt and other surface driers, Lead carboxylates cause the film to dry through its entire thickness and are therefore known as a through-driers. Lead also improves flexibility and durability of the film.
Lithium	Li	0.02	Lithium carboxylates promote through-drying. They are often used in High Solids coatings and water-dispersible alkyds. They do not lose their effectiveness even in cool environments.
Manganese	Mn	0.02	Manganese carboxylates improve the surface drying of a paint film and also possess some through-drying properties. They are frequently used as polymerization accelerators in baking finishes and low-temperature drying systems.
Potassium	K	0.10	Potassium carboxylates work synergistically with Cobalt in unsaturated polyester thermo-set systems.
Strontium	Sr	0.20	Strontium carboxylates improve through-drying under adverse conditions, such as high humidity and low temperatures.
Zinc	Zn	0.15	Zinc carboxylates demonstrate anti-oxidant properties. They are used as additives to retard the thermal breakdown of lubricating oils and greases. Either by themselves or in conjunction with Calcium or Barium, they are very efficient at stabilizing PVC against in-process heat degradation. Zinc carboxylates keep auto-oxidative films "open," thus permitting hardening throughout. Zinc carboxylates are very effective wetting/pigment-dispersing agents and have the added property of inhibiting mildew formation in coatings.
Zirconium	Zr	0.20	Zirconium carboxylates improve the through-dry of auto-oxidative drying systems. They are used in combination with Cobalt and Calcium carboxylates. They are preferentially used as replacements for Lead. Zirconium carboxylates are also utilized as polymerization catalysts.
Compound		Typical use level % MEKO per resin solids	Description
Methyl Ethyl Ketoxime	MEKO	0.40	Methyl Ethyl Ketoxime is sold as Troymax AntiSkin B. Its primary mode of action is to complex with Cobalt to retard the catalytic action of the Cobalt during paint manufacture and storage. It evaporates quickly when the paint is applied to the substrate, thus allowing Cobalt to catalyze the drying process. The slow evaporation of MEKO in bulk paint systems allows the vapor to "sit" on top of the paint to provide a barrier from oxygen in the air.

Products & Packaging

Function	Product	Drum		Small Drum		Tote		
		lbs.	kg	lbs.	kg	lbs.	kg	
Carboxylates from Synthetic Acids	Troymax™ Barium 12.5	441	200	110	50	-	-	
	Troymax Bismuth 24	441	200	-	-	-	-	
	Troymax Calcium 10NA	450	204	110	50	2250	1021	
	8NA	430	195	99	45	-	-	
	6NA	408	185	99	45	2000	907	
	5NA	401	182	99	45	-	-	
	4NA	375	170	99	45	2200	998	
	Troymax Calcium Octoate 6	408	185	99	45	1840	835	
	5	401	182	99	45	-	-	
	4	375	170	99	45	-	-	
	Troymax Cobalt 12	452	205	110	50	2205	1000	
	10	441	200	110	50	2205	1000	
	8	441	200	99	45	-	-	
	6	408	185	99	45	-	-	
	Troymax Cerium 12	441	200	-	-	-	-	
	6	397	180	-	-	-	-	
	Troymax Lead 36	551	250	-	-	-	-	
	33	551	250	-	-	-	-	
	32	551	250	-	-	-	-	
	30	551	250	-	-	-	-	
	24	485	220	-	-	-	-	
	Troymax Lithium 2	397	180	99	45	-	-	
	Troymax Manganese 12	441	200	110	50	2205	1000	
	10	441	200	110	50	-	-	
	10PC	441	200	66	30	-	-	
	9	430	195	99	45	1984	900	
	6	401	182	99	45	-	-	
	Troymax 400 (Potassium 15)	450	204	100	45	2300	1043	
	Troymax Strontium 10	441	200	-	-	-	-	
	Troymax Zinc 16	450	204	99	45	-	-	
	12	441	200	99	45	-	-	
	10	430	195	99	45	-	-	
	8	408	185	99	45	-	-	
	Troymax Zirconium 24	551	250	110	50	2400	1089	
	18	500	227	110	50	2300	1043	
	12	441	200	110	50	2094	950	
	10	441	200	110	50	-	-	
	6	401	182	99	45	-	-	
	Anti-Skinning Agents	Troymax AntiSkin B	420	191	100	45	2000	907
		Troymax AntiSkin OL	400	181	100	45	-	-
Carboxylates from Naturally Occurring Acids	Troychem™ Calcium 4	400	181	99	45	-	-	
	Troychem Copper 8	441	200	-	-	-	-	
	Troychem Iron 6	441	200	-	-	-	-	
	Troychem Manganese 6	408	185	-	-	-	-	
	Troychem Zinc 10	430	195	-	-	-	-	
	8	408	185	-	-	-	-	
	Troychem Cobalt 6	408	185	-	-	-	-	
Troychem Lanthanum 4	375	170	-	-	-	-		
Loss of Dry Inhibitor	Troymax Perma Dry	450	204	100	45	-	-	
Water Dispersible	Troychem Calcium 6WD	425	193	100	45	-	-	
	Troychem Cobalt 6WD	420	191	99	45	-	-	
	Troychem Manganese 6WD	430	195	-	-	-	-	
	Troychem Zirconium 12WD	400	181	99	45	-	-	
	Troymax Lithium 2	397	180	99	45	-	-	
Non-Metallic Driers	Troymax 250	450	200	110	50	-	-	
Drier Blends	Troymax CZ69	450	204	99	45	-	-	
	Troymax 123	441	200	-	-	1984	900	
	Troymax 2002	441	200	99	45	2205	1000	
	Troymax BXPB	400	181	-	-	-	-	
	Troymax B530	450	204	-	-	-	-	
Polyester Accelerators	Troymax 559	450	204	-	-	-	-	
	Troymax PermaDry	450	204	100	45	-	-	
Stearates	Troymax 858	Contact Troy for packaging information.						

Drier Related Troubleshooting

Drier Related Trouble	Increase	or	Reduce	or	Add	or	Replace
Film Too Tacky	Co or Mn				Ce or K		
Blooming	Ca						
After-tack	Zr				Fe		
Poor Color Retention					Zn		
Low Gloss					Zn		
Poor Drying in High Humidity					Ce or La		Ca with Ba
Coating Is Too Soft					Zn, Ce, or Bi		
Loss of Dry					PermaDry		
<i>Through Pigment Absorption</i>	Neutral Ca				Zn, Fe, or Troymax 250		
<i>Through Drier Precipitation</i>	Over-based Ca				Troymax 250		
Dries Too Slowly	All driers						
Coating Has Poor Water Resistance							Ca with Ba or Sr
Wrinkling	Ca		Co		Zn		Co with Mn
In-Can Skinning	Anti-Skin B or OL		Co				
Poor Through Dry	Zr or Ca				Bi		
Yellowing	Co or La		Ce or Mn				
Slow Surface Dry	Co						K or Ca
Dust Entrapment	Co						
Slow Drying at Low Temperature							Ca with Ba, Sr, or Li or Co with Mn
Film Is Too Brittle	Zr		Co				Co with Mn
Sulphide Staining							Pb with Zr
Poor Pigment Dispersion	Incorporate Zn or Calcium Octoate in the pre-grind						

USA
 ☎ 973-443-4200
 ☎ 973-443-0843

Asia Pacific
 ☎ 66-2-361-4515
 ☎ 66-2-361-4520

Canada
 ☎ 905-760-7902
 ☎ 905-760-7904

Brasil
 ☎ 55-115575-0090
 ☎ 55-115575-9080

Europe
 ☎ 31-10-592-7494
 ☎ 31-10-592-8877

Middle East & Africa
 ☎ 44-162-878-1800
 ☎ 44-162-867-6600

For further information,
 visit www.troycorp.com
 and select the **Metal Carboxylates** link.



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