

Additives for PVC Processing

– Calendering –



CREATING VALUE for tomorrow, through all that we do today

From basics to semi-specialty and specialty chemicals, Emery Oleochemicals is dedicated to providing customers with best-in-class solutions through continuous product development and stringent quality standards. Derived from renewable resources, our products are predominantly made from natural oils and fats such as palm kernel oil and tallow. We pride ourselves on having a diverse portfolio of oleochemical products suited for a broad range of applications.

Our portfolio includes renewable solutions for the Agro Green, Bio-Lubricants, Green Polymer Additives, Home and Personal Wellness and OleoBasics markets.

Leading product innovation naturally

We are committed to CREATING VALUE for you with our combined strengths in global manufacturing footprint, research and development, distribution, marketing and technical know-how. Uniquely packaged, our competitive advantage enables us to offer you innovative and competitive solutions designed to meet your needs.

Guided by an inventive spirit that goes beyond providing high-performance solutions, we are able to help your business deal with the challenges of a market that is going greener by the day. This makes us your preferred natural-based chemical solutions partner.



Designing natural-based solutions in polymers for a better tomorrow

For over 60 years, we have been recognized as a leading innovator of a broad range of polymer additives with our high-performance naturalbased chemical brands, LOXIOL® and EDENOL®. For having successfully improved our customers' product performance and processing efficiencies, our solutions today can be found in growth markets such as housing and construction, automotive, packaging and electronics. Our products are also known to enhance the quality of items for everyday life including toys and sporting equipment.

As your preferred partner with leading technical expertise, we offer customized solutions based on product groups such as lubricants, plasticizer and viscosity depressants, anti-static and anti-fogging agents, release agents, surfactants, green polyols and specialty fatty acids.

We remain committed to delivering the highest in quality standards and innovative solutions while building a sustainable tomorrow in polymers.



Packaging Film

Flooring / Roofing Membrane / General Purpose Overview: Internal & External Lubricating Effect

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Release 03 / 2013 Subject to alteration & errors and omissions excepted

	Delivery Form	Melting Range (°C)	Dosage (phr)	Trans- parent Appli- cation
l ester	liquid	<0*	0.5-1.5	yes
l ester	liquid	<0*	0.5-1.5	yes
2r	solid	83-87	0.5-2.5	yes
ubricant	solid	76-81	0.8-1.5	yes

LOXIOL® G 16	Lubricant, internal	Glycerol partial ester	liquid	<0*	0.5-1.5	yes
LOXIOL® P 1141	Lubricant, internal	Glycerol partial ester	liquid	<0*	0.5-1.5	yes
LOXIOL® G 15 PULVER	Lubricant, internal	Fatty acid ester of polyol	solid	83-87	0.5-2.5	yes
LOXIOL® GH 4	Lubricant, internal	Combination lubricant	solid	76-81	0.8-1.5	yes
LOXIOL® P 728	Lubricant, internal	Polyol partial ester	solid	49-52	0.5-1.5	yes
LOXIOL® EP 3500	Lubricant, internal + external	Ca-stearate	solid	150-170	0.2-0.5	yes
LOXIOL® G 70 S	Lubricant, external	High molecular weight poly ester	solid	55-58	0.2-0.8	yes
LOXIOL® G 78	Lubricant, external	Combination lubricant	solid	105-115	0.3-1.2	yes
LOXIOL® G 78 V	Lubricant, external	Combination lubricant	solid	100-110	0.3-1.2	yes
LOXIOL® P 1732	Lubricant, external	Combination lubricant	solid	100-115	0.3-1.2	yes
LOXIOL® P 621	Lubricant, external	Combination lubricant	solid	82-85	0.2-0.8	yes
LOXIOL® 3376	Lubricant, external	High molecular weight poly ester	solid	84-88	0.5-0.8	yes
LOXIOL® EBS SPEZ P	Release Agent	Ethylene-bis-stearamide	solid	141-147	0.2-0.4	no
LOXIOL® G 70 S	Release Agent	High molecular weight poly ester	solid	55-58	0.2-0.8	yes
LOXIOL® G 78	Release Agent	Combination lubricant	solid	105-115	0.3-1.2	yes
LOXIOL® G 78 V	Release Agent	Combination lubricant	solid	100-110	0.3-1.2	yes
EDENOL® D 81	Plasticizer, stabilising properties	Epoxidised soya bean oil	liquid	-	-	yes
EDENOL® D 82 S	Plasticizer, stabilising properties	Epoxidised soya bean oil	liquid	-	-	yes
LOXIOL® 80 X	Antistatic Agent	Mixture of anionic and non-ionic compounds	liquid	-	0.2-2.0	no
LOXIOL® VPA 1726	Antistatic Agent	Polyol partial ester	liquid	-	0.5-3.0	yes
LOXIOL® 93 P	Antistatic Agent	Anionic compound	solid	-	0.2-1.0	по

* pour point

Calender / Calandrette					
Formulation: CaZn stabilized	Dosage (phr)				
S-PVC, k-value 57-60	100				
MBS-Impact Modifier	4.0-12				
EDENOL® D 82 S	3.0-5.0				
CaZn-Stabilizer	1.7				
LOXIOL® P 728	0.5				
LOXIOL® G 78 V / G 78	0.2-0.5				
Pigment	Х				
Film with antistatic properties					
E-PVC, k-value 60	5.0-20				
LOXIOL® VPA 1726	0.4-3.0				
Film with improved denesting properties					
High molecular weight micro susp. PVC	0.2-3				
LOXIOL® EBS SPEZ P	0.2-0.4				
Formulation: Sn stabilized	Dosage (phr)				
Formulation: Sn stabilized S-PVC, k-value 57-60	Dosage (phr) 100				
Formulation: Sn stabilized S-PVC, k-value 57-60 MBS-Impact Modifier	Dosage (phr) 100 4.0-12				
Formulation: Sn stabilized S-PVC, k-value 57-60 MBS-Impact Modifier Flow Modifier	Dosage (phr) 100 4.0-12 0.3-1.0				
Formulation: Sn stabilized S-PVC, k-value 57-60 MBS-Impact Modifier Flow Modifier Acylic lubricant	Dosage (phr) 100 4.0-12 0.3-1.0 0.5-1.0				
Formulation: Sn stabilized S-PVC, k-value 57-60 MBS-Impact Modifier Flow Modifier Acylic lubricant Octyl tin mercaptide	Dosage (phr) 100 4.0-12 0.3-1.0 0.5-1.0 1.2-1.5				
Formulation: Sn stabilized S-PVC, k-value 57-60 MBS-Impact Modifier Flow Modifier Acylic lubricant Octyl tin mercaptide LOXIOL® P 1141	Dosage (phr) 100 4.0-12 0.3-1.0 0.5-1.0 1.2-1.5 0.6-1.3				
Formulation: Sn stabilized S-PVC, k-value 57-60 MBS-Impact Modifier Flow Modifier Acylic lubricant Octyl tin mercaptide LOXIOL® P 1141 LOXIOL® G 78 V / G 78 / G 70 S	Dosage (phr) 100 4.0-12 0.3-1.0 0.5-1.0 1.2-1.5 0.6-1.3 0.2-0.7				
Formulation: Sn stabilized S-PVC, k-value 57-60 MBS-Impact Modifier Flow Modifier Acylic lubricant Octyl tin mercaptide LOXIOL® P 1141 LOXIOL® G 78 V / G 78 / G 70 S Pigment / TiO2	Dosage (phr) 100 4.0-12 0.3-1.0 0.5-1.0 1.2-1.5 0.6-1.3 0.2-0.7 X				
Formulation: Sn stabilized S-PVC, k-value 57-60 MBS-Impact Modifier Flow Modifier Acylic lubricant Octyl tin mercaptide LOXIOL® P 1141 LOXIOL® G 78 V / G 78 / G 70 S Pigment / TiO2 Film with antistatic properties	Dosage (phr) 100 4.0-12 0.3-1.0 0.5-1.0 1.2-1.5 0.6-1.3 0.2-0.7 X				
Formulation: Sn stabilized S-PVC, k-value 57-60 MBS-Impact Modifier Flow Modifier Acylic lubricant Octyl tin mercaptide LOXIOL® P 1141 LOXIOL® G 78 V / G 78 / G 70 S Pigment / TiO2 Film with antistatic properties E-PVC, k-value 60	Dosage (phr) 100 4.0-12 0.3-1.0 0.5-1.0 1.2-1.5 0.6-1.3 0.2-0.7 X X 5.0-20				
Formulation: Sn stabilizedS-PVC, k-value 57-60MBS-Impact ModifierFlow ModifierAcylic lubricantOctyl tin mercaptideLOXIOL® P 1141LOXIOL® G 78 V / G 78 / G 70 SPigment / TiO2Film with antistatic propertiesE-PVC, k-value 60LOXIOL® VPA 1726	Dosage (phr) 100 4.0-12 0.3-1.0 0.5-1.0 1.2-1.5 0.6-1.3 0.2-0.7 X 5.0-20 0.4-3.0				
Formulation: Sn stabilized S-PVC, k-value 57-60 MBS-Impact Modifier Flow Modifier Acylic lubricant Octyl tin mercaptide LOXIOL® P 1141 LOXIOL® G 78 V / G 78 / G 70 S Pigment / TiO2 Film with antistatic properties E-PVC, k-value 60 LOXIOL® VPA 1726 Film with improved denesting properties	Dosage (phr) 100 4.0-12 0.3-1.0 0.5-1.0 1.2-1.5 0.6-1.3 0.2-0.7 X 5.0-20 0.4-3.0				
Formulation: Sn stabilizedS-PVC, k-value 57-60MBS-Impact ModifierFlow ModifierAcylic lubricantOctyl tin mercaptideLOXIOL® P 1141LOXIOL® G 78 V / G 78 / G 70 SPigment / TiO2Film with antistatic propertiesE-PVC, k-value 60LOXIOL® VPA 1726Film with improved denesting propertiesHigh molecular weight micro susp. PVC	Dosage (phr) 100 4.0-12 0.3-1.0 0.5-1.0 1.2-1.5 0.6-1.3 0.2-0.7 X 5.0-20 0.4-3.0				

Chill Roll Equipment				
Formulation: CaZn stabilized	Dosage (phr)			
S-PVC, k-value 57-60	100			
MBS-Impact Modifier	4.0-12			
EDENOL® D 82 S	3.0-5.0			
CaZn-Stabilizer	1.7			
LOXIOL® P 728	0.5			
LOXIOL® G 78 V / G 78	0.5			
ox. PE wax	0.15			
Pigment	Х			
Film with antistatic properties				
E-PVC, k-value 60	5.0-20			
LOXIOL® VPA 1726	0.4-3.0			
Film with improved denesting properties				
High molecular weight micro susp. PVC	0.2-3.0			
LOXIOL® EBS SPEZ P	0.2-0.4			
Formulation: Sn stabilized	Dosage (phr)			
S-PVC, k-value 57-60	100			
	100			
MBS-Impact Modifier	4.0-12			
MBS-Impact Modifier Flow Modifier	4.0-12 0.3-1.0			
MBS-Impact Modifier Flow Modifier Acylic lubricant	4.0-12 0.3-1.0 0.5-1.0			
MBS-Impact Modifier Flow Modifier Acylic lubricant Octyl tin mercaptide	4.0-12 0.3-1.0 0.5-1.0 1.2-1.5			
MBS-Impact Modifier Flow Modifier Acylic lubricant Octyl tin mercaptide LOXIOL® P 1141	4.0-12 0.3-1.0 0.5-1.0 1.2-1.5 0.6-1.3			
MBS-Impact Modifier Flow Modifier Acylic lubricant Octyl tin mercaptide LOXIOL® P 1141 ox. PPPE wax	4.0-12 0.3-1.0 0.5-1.0 1.2-1.5 0.6-1.3 0.15			
MBS-Impact Modifier Flow Modifier Acylic lubricant Octyl tin mercaptide LOXIOL® P 1141 ox. PPPE wax LOXIOL® G 78 V / G 78 / G 70 S	4.0-12 0.3-1.0 0.5-1.0 1.2-1.5 0.6-1.3 0.15 0.2-0.7			
MBS-Impact Modifier Flow Modifier Acylic lubricant Octyl tin mercaptide LOXIOL® P 1141 ox. PPPE wax LOXIOL® G 78 V / G 78 / G 70 S Pigment / TiO2	4.0-12 0.3-1.0 0.5-1.0 1.2-1.5 0.6-1.3 0.15 0.2-0.7 X			
MBS-Impact Modifier Flow Modifier Acylic lubricant Octyl tin mercaptide LOXIOL® P 1141 ox. PPPE wax LOXIOL® G 78 V / G 78 / G 70 S Pigment / TiO2 Film with antistatic properties	4.0-12 0.3-1.0 0.5-1.0 1.2-1.5 0.6-1.3 0.15 0.2-0.7 X			
MBS-Impact Modifier Flow Modifier Acylic lubricant Octyl tin mercaptide LOXIOL® P 1141 ox. PPPE wax LOXIOL® G 78 V / G 78 / G 70 S Pigment / TiO2 Film with antistatic properties E-PVC, k-value 60	4.0-12 0.3-1.0 0.5-1.0 1.2-1.5 0.6-1.3 0.15 0.2-0.7 X			
MBS-Impact Modifier Flow Modifier Acylic lubricant Octyl tin mercaptide LOXIOL® P 1141 ox. PPPE wax LOXIOL® G 78 V / G 78 / G 70 S Pigment / TiO2 Film with antistatic properties E-PVC, k-value 60 LOXIOL® VPA 1726	4.0-12 0.3-1.0 0.5-1.0 1.2-1.5 0.6-1.3 0.15 0.2-0.7 X 5.0-20 0.4-3.0			
MBS-Impact Modifier Flow Modifier Acylic lubricant Octyl tin mercaptide LOXIOL® P 1141 ox. PPPE wax LOXIOL® G 78 V / G 78 / G 70 S Pigment / TiO2 Film with antistatic properties E-PVC, k-value 60 LOXIOL® VPA 1726 Film with improved denesting properties	4.0-12 0.3-1.0 0.5-1.0 1.2-1.5 0.6-1.3 0.15 0.2-0.7 X 5.0-20 0.4-3.0			
MBS-Impact Modifier Flow Modifier Acylic lubricant Octyl tin mercaptide LOXIOL® P 1141 ox. PPPE wax LOXIOL® G 78 V / G 78 / G 70 S Film with antistatic properties E-PVC, k-value 60 LOXIOL® VPA 1726 Film with improved denesting properties High molecular weight micro susp. PVC	4.0-12 0.3-1.0 0.5-1.0 1.2-1.5 0.6-1.3 0.15 0.2-0.7 X 5.0-20 0.4-3.0			

Product	Function	Chemistry	Delivery Form	Melting Range (°C)	Dosage (phr)
LOXIOL® G 71 S	Lubricant, external	High molecular weight poly ester	liquid	<-20*	0.1-1.0
LOXIOL® G 71 S	Release Agent	High molecular weight poly ester	liquid	<-20*	0.1-1.0
EDENOL® D 81	Plasticizer, stabilising properties	Epoxidised soya bean oil	liquid	-	-
LOXIOL® 80 X	Antistatic Agent	Mixture of anionic and non-ionic compounds	liquid	-	0.2-2.0
LOXIOL® 3366	Antistatic Agent	Polyol partial ester	liquid	-	0.5-3.0
LOXIOL® 3380	Antistatic Agent	Mixture based on polyglycol ester	liquid	-	0.5-3.0

* pour point

GUIDE FORMULATIONS

Flooring					
Formulation: CaZn stabilized	Dosage (phr)				
S-PVC, k-value 60-70	100-0				
E-PVC, k-value 60-70	0-100				
Filler (CaCO3)	0-500				
Plasticizer (DOP, DINP, DIDA, DOA etc.)	20-80				
EDENOL® D 81	1-3				
CaZn stabilizer	0.5-1.5				
LOXIOL® G 71 S	0.1-0.3				
LOXIOL® 80 X / 3366 / 3380	1-3				
Pigment (TiO2, etc.)	Х				

Roofing Membrane					
Formulation: CaZn stabilized	Dosage (phr)				
S-PVC, k-value 70	100				
Plasticizer (DIDP, 9-11 phthalate, EVA)	50-70				
EDENOL® D 81	3				
Filler (Kaolin)	0-10				
CaZn stabilizer	2-3				
Org. phosphite	0.5-1.5				
Flame retardant	Х				
Other additives (e.g. fungicide, etc.)	Х				
Pigment (TiO2, carbon black, etc.)	Х				

General Purpose					
Formulation	Dosage (phr)				
S-PVC, k-value 70	100				
DOP	30-70				
EDENOL® D 81	1-3				
Filler (CaCO3)	0-50				
Other additives (e.g. flame retardant, fungicide, antistatic agent, etc.)	Х				
Pigment (TiO2, etc.)	Х				
CaZn / BaZn stabilizer	2-3				
LOXIOL® G 71 S	0.1-0.3				

LOXIOL®	Internal	External	Transparent Article	Melting Range (°C)	Dosage (%)	Chemistry
G 20		11	•	54-56	0.1-0.5	Fath, and
G 21 H			•	71-80	0.1-0.5	
2050				104-110	0.1-0.5	Paraffin wax
P 1508				90-140	0.05-0.2	PE wax
G 40			•	< 7 *	0.2-1.5	
G 41	111			69-77	0.5-1.5	
G 30				46-49	0.5-1.5	Wax ester
G 32				52-56	0.5-1.5	
G 47				60-64	0.3-1.0	
G 60			•	44-47	0.5-3.0	Dicarboxylic acid ester
G 10 V			•	< 0 *	0.5-2.5	
G 11			•	<-10 *	0.5-1.5	
G 12-40 / G 12-40 V				55-62	0.5-1.5	
G 12				55-62	0.2-1.5	
EP 55				55-62	0.2-1.5	
G 13			•	< -10 *	0.5-1.5	
G 15 PULVER			•	83-90	0.5-2.5	
G 16			•	< 0 *	0.5-1.5	
G 59			•	68-72	0.5-3.0	
G 62				50-55	0.5-1.5	Polyol ester
G 63				50-55	0.5-2.0	
P 1141			•	< 0 *	0.5-1.5	
P 1206			•	53-56	0.5-1.5	
3366			•	< 0 **	0.5-4.0	
A 4			•	< 0 **	2.0-4.0	
P 728			•	49-52	0.5-1.5	
G 24				50-55	0.3-0.8	
2899				70-80	0.3-0.8	
G 53			•	49-54	0.5-1.5	Fatty alcohol

NOTES

LOXIOL®	Internal	External	Transparent Article	Melting Range (°C)	Dosage (%)	Chemistry
GH 4			•	76-81	0.8-1.5	
3591				100-108	0.2-1.5	
1820				122-126	0.5-1.5	
P 2072				100-130	0.5-1.5	Combination lubricant
VPG 1781				90-100	0.2-1.5	
VPN 963				80-90	0.1-1.5	
GS 891				95-101	1.5-2.0	
EP 3500			•	150-170	0.2-1.0	Ca-stearate
GE 2063		11		90-160	1.7-2.5	Lubricant with co-stabilizing effect
G 70 S			•	55-58	0.2-0.8	
G 71 S			•	< -20 *	0.2-1.0	
3376		111	•	84-88	0.2-0.8	
G 72			•	43-47	0.3-1.0	High molecular weight polyester
G 78			•	105-115	0.3-1.2	(metal release effect)
G 78 V			•	100-110	0.3-1.2	
P 621		1111	•	82-85	0.2-0.8	
1732			•	100-115	0.3-1.2	



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EDENOL° & LOXIOL°

LOXIOL® and EDENOL® are the plastics additives brand names of Emery Oleochemicals. Our products are based on natural resources for the processing of plastics materials. The main product groups and functions we offer are:

Lubricants – Optimise the processing characteristics of plastics materials. Our lubricants improve the rheology of the polymer melt by reducing friction and resistance to flow within the melt. >>> Positive influence on the mechanical properties, machinery output and surface finish of the final product.

Release Agents – Aid in the separation of a component from its mould. >>> Positive effect on cycle time and surface finish.

Special Plasticizers – Improve processability and performance of plastics and synthetic rubbers. >>> Positive influence on flexibility and durability of the final article.





Viscosity Regulators – Improve the flow of PVC paste formulations. >>> Positive influence on processing temperature and processability.

Antistatic Agents – Eliminate the build-up of a static charge in the finished article. >>> Positive effects including avoidance of dust pick-up, handling problems as well as the risks associated with static discharges.

Antifogging Agents – Prevent the formation of water droplets on plastics film surfaces. >>> Positive effect on visibility, quality and attractiveness of packed products and avoidance of damage to plants in growing tunnels.

Antiblocking/Slip Agents – Reduce the friction between the polymer to polymer surface or processing equipment. >>> Positive effect on production handling by preventing adhesion.

CREATING VALUE FOR OUR CUSTOMERS, ANYWHERE IN THE WORLD.



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