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Green Polymer  
Additives

Additives for PVC Processing

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– Paste Processing –

# 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 natural-based 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.



Rotational Moulding / Dip Coating / Casting / Spread Coating / Coil Coating	4
Overview: Internal & External Lubricating Effect	6

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■ ROTATIONAL MOULDING, DIP COATING, CASTING, SPREAD COATING, COIL COATING

Product	Function	Chemistry	Delivery Form	Melting Range (°C)	Dosage (phr)
LOXIOL® G 71 S	Lubricant, external	High molecular weight poly ester	liquid	<-20*	0.2-1.0
LOXIOL® G 71 S	Release Agent	High molecular weight poly ester	liquid	<-20*	0.2-1.0
EDENOL® T810T STAB	Plasticizer, high temperature	Trimellitate ester	liquid	-	30-80
EDENOL® TOTM	Plasticizer, high temperature	Trimellitate ester	liquid	-	30-80
EDENOL® 888	Plasticizer, low temperature	Sebacate ester	liquid	-	max. 50
EDENOL® DOZ	Plasticizer, low temperature	Azelaic ester	liquid	-	max. 45
EDENOL® DBS	Plasticizer, low temperature	Sebacate ester	liquid	-	max. 50
EDENOL® 1200	Plasticizer, oil & solvent resistant	Polymeric plasticizer based on adipic acid	liquid	-	30-80
EDENOL® 1215	Plasticizer, oil & solvent resistant	Polymeric plasticizer based on adipic acid	liquid	-	30-80
EDENOL® 1234	Plasticizer, oil & solvent resistant	Polymeric plasticizer based on adipic acid	liquid	-	30-80
LOXIOL® DP	Plasticizer, secondary	Fatty acid polyglycol ester	liquid	-	0.5-2.0
EDENOL® 192	Plasticizer, secondary	Fatty acid ester	liquid	-	max. 10
EDENOL® B 316 SPEZIAL	Plasticizer, stabilising properties	Epoxidised linseed oil	liquid	-	-
EDENOL® D 81	Plasticizer, stabilising properties	Epoxidised soya bean oil	liquid	-	-
EDENOL® D 82 S	Plasticizer, stabilising properties	Epoxidised soya bean oil	liquid	-	-
EDENOL® 190	Viscosity Regulator	Fatty acid ester	liquid	-	max. 15
EDENOL® 192	Viscosity Regulator	Fatty acid ester	liquid	-	max. 15
EDENOL® 311	Viscosity Regulator	Fatty acid ester	liquid	-	1.0-2.0
LOXIOL® LS 3 DEO N	Viscosity Regulator	Fatty alcohol polyglycol ether	liquid	-	0.5-2.0
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
LOXIOL® 80 X	Antistatic Agent	Mixture of anionic and non-ionic compounds	liquid	-	0.2-2.0
LOXIOL® 93 P	Antistatic Agent	Anionic compound	solid	-	0.2-1.0
LOXIOL® E SPEZ P	Antiblocking- / Slip Agent	Erucic acid amide	solid	78-84	0.5-1.0

\* pour point

GUIDE FORMULATIONS

Rotational Moulding, e.g. Dolls and Balls	
Formulation	Dosage (phr)
Paste-PVC, k-value 70	100
DINP or other plasticizer	75
EDENOL® D 81	3
EDENOL® 190 / 192	5
LOXIOL® G 71 S	1
CaZn stabilizer	3
Pigment	X

Casting, e.g. Lid Seals + Bottle Caps	
Formulation	Dosage (phr)
Paste-PVC, k-value 70	100
DINP or other plasticizer	65
EDENOL® D 82 S	2
LOXIOL® E SPEZ P	1
Zn soap	0.5
Sodium Bicarbonate, modified	0.5-1.0
Pigment	X

Dip Coating, e.g. Gloves	
Formulation	Dosage (phr)
Paste-PVC, k-value 70	100
DINP or other plasticizer	80-90
EDENOL® D 81	3
EDENOL® 190 / 192	5
LOXIOL® DP	1
LOXIOL® G 71 S	1
CaZn stabilizer	3
Pigment	X

Spread Coating, e.g. Artificial Leather, Flooring, Base Coats for Sheets	
Formulation	Dosage (phr)
Paste-PVC, k-value 70	100
DINP or other plasticizer	65
EDENOL® D 81	3
EDENOL® 190 / 192	5
CaZn stabilizer	3
Filler / Pigments	X

■ OVERVIEW: INTERNAL & EXTERNAL LUBRICATING EFFECT

LOXIOL®	Internal	External	Transparent Article	Melting Range (°C)	Dosage (%)	Chemistry
G 20		■ ■	●	54-56	0.1-0.5	Fatty acid
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	Wax ester
G 41	■ ■ ■ ■	■		69-77	0.5-1.5	
G 30	■ ■ ■ ■	■ ■		46-49	0.5-1.5	
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	Polyol ester
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	
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

LOXIOL®	Internal	External	Transparent Article	Melting Range (°C)	Dosage (%)	Chemistry
GH 4	■ ■ ■ ■ ■ ■		●	76-81	0.8-1.5	Combination lubricant
3591	■ ■ ■ ■ ■ ■			100-108	0.2-1.5	
1820	■ ■ ■ ■ ■ ■	■ ■		122-126	0.5-1.5	
P 2072	■ ■ ■ ■ ■	■ ■		100-130	0.5-1.5	
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	■ ■ ■ ■ ■ ■	■ ■		90-160	1.7-2.5	Lubricant with co-stabilizing effect
G 70 S	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	●	55-58	0.2-0.8	High molecular weight polyester (metal release effect)
G 71 S	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	●	< -20 *	0.2-1.0	
3376	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	●	84-88	0.2-0.8	
G 72	■ ■ ■ ■ ■ ■	■ ■	●	43-47	0.3-1.0	
G 78	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	●	105-115	0.3-1.2	
G 78 V	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	●	100-110	0.3-1.2	
P 621	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	●	82-85	0.2-0.8	
1732	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	●	100-115	0.3-1.2	



# 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.

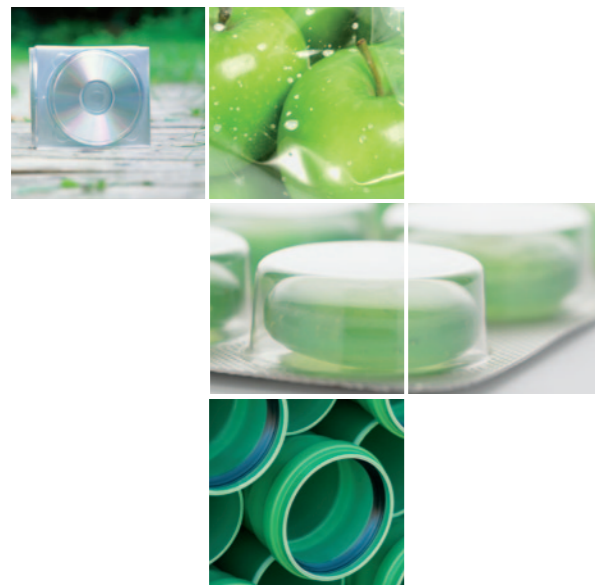


**Viscosity Regulators** – Improve the flow of PVC paste formulations. >>> Positive influence on processing temperature and processability.

**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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