



Roflex Series

Flame retardant plasticizers in PVC

Local. Global. Integrated.

Operating in 17 countries, in 39 different locations, PCC SE currently employs over 3 300 people.



About Us

PCC Rokita SA is one of the largest chemical companies in Poland, offering a wide range of advanced products for various industrial sectors. The company has four main chemical complexes: Chlorine Complex, Polyols Complex, Phosphorus Chemicals Complex and Lubricants Complex. Each specialises in the production of innovative raw materials and additives used in a wide range of industries. Thanks to modern technologies and strong research and development facilities, PCC Rokita SA plays an important role in the European chemical market,

providing high quality products that meet the stringent requirements of its customers.

PCC Rokita pays particular attention to sustainable development, which is one of the key elements of its corporate strategy. In order to strengthen its competitive position in the chemical market, the company is committed to promoting responsible production and consumption along the entire value chain. The concept of sustainable development is therefore a key aspect of all the company's management and operational processes.

PCC ROKITA SA PCC PCG OXYALKYLATES IRPC	PCC ROKITA SA	PCC ROKITA SA	PCC EXOL SA PCC CHEMAX INC PCC PCG OXYALKYLATES	PCC SYNTEZA
Polyols 	Chlorine 	Phosphorus 	Surfactants 	Alkylphenols 
<ul style="list-style-type: none"> • Polyether polyols • Polyester polyols • Prepolymers • Polyurethane Systems 	<ul style="list-style-type: none"> • Chlorine • MCAA • Other Chlorine Downstream Product 	<ul style="list-style-type: none"> • Phosphorus derivatives • Naphthalene derivatives • Polycarboxyethers (PCE) 	<ul style="list-style-type: none"> • Anionic surfactants • Cationic surfactants • Nonionic surfactants • Amphoteric surfactants (betaines) • Chemical formulation 	<ul style="list-style-type: none"> • Nonylphenol • Dodecylphenol • Tristyrylphenol
PCC CONSUMER PRODUCTS SA	PCC ROKITA SA	PCC INTERMODAL SA	PCC BAKKISILICON HF.	PCC SE
Consumer Products 	Energy 	Logistics 	Silicon 	Holding & Projects 
<ul style="list-style-type: none"> • Household & industrial Cleaners, Detergents and Personal Care Products 	<ul style="list-style-type: none"> • Renewable Energy • Conventional Energy 	<ul style="list-style-type: none"> • Intermodal transport • Road Haulage • Rail Transport 	<ul style="list-style-type: none"> • Microsilica • Silicon Metal 	<ul style="list-style-type: none"> • Portfolio Management • Project Development

Roflex Series

Phosphorus based flame retardant plasticizers dedicated to flexible PVC. Highly specialized additives for plastics lead to effective plasticizing effect and flame retardancy. Roflex series allow blending with non-flame retarding plasticizers and solid form flame retardants providing better economics and wide formulations adjustment possibilities.

Key applications

- Technical foils, membranes
- Welding curtains
- Conveyor belts
- Artificial leather, tarpaulins
- Wire & cables

Key features

- Excellent flame retarding profile
- Efficient plasticizing effect
- Low migration
- Synergistic effect with solid flame retardants
- Compatibility with non-FR plasticizers

Typical properties

Product name	Chemical name	Density at 25°C [g/cm ³]	Viscosity at 25°C [mPa*s]	Phosphorus content [wt. %]	Feature
Roflex 50	isopropylated triaryl phosphate	1.17	53	8.5	Low viscosity
Roflex 65		1.16	69	8.3	
Roflex T70	t-butylated triaryl phosphate	1.18	72	8.5	Safe to human health
Roflex T70L		1.12	310	7.4	No-labelling
Roflex T45	modified aryl phosphates	1.04	45	proprietary	Low smoke & low temperature
Roflex R250	modified aryl phosphates	1.25	250	proprietary	High P-content



Product performance

Plasticizer / Feature	Plasticizing effect	FR efficiency	Low smoke	Surface migration	Labelling
Roflex 50 / 65	• •	• • •	•	• •	•
Roflex T70	• •	• • •	•	• •	• •
Roflex T70L	•	• •	• •	• •	• • •
Roflex T45	• • •	• •	• • •	•	• • •
Roflex R250	• •	• • •	• • •	• •	• •

• moderate • • good • • • excellent

Flexible suspension PVC

Basic formulation

Raw material	Loadings [phr]	Plasticizer / Feature	Elongation [%] at 25°C	Elongation [%] at 0°C	Hardness [°Sh A]	Migration wt. loss [%] after 7 days	LOI [%]	Thermal stability [min]
S-PVC	100	Roflex 50 / 65	195	95	93	0.29	33.8	30:00
		Roflex T70	190	85	94	0.29	33.5	30:00
Plasticizer	50	Roflex T70L	130	10	97	0.26	32.8	37:00
		Roflex T45	260	110	88	0.47	29.0	38:30
Stabilizers	4	Roflex R250	240	10	97	0.10	36.6	24:00
		DOTP	260	120	85	1.25	24.6	52:00

Raw material	Loadings [phr]	Plasticizer / Feature	Elongation [%] at 25°C	Elongation [%] at 0°C	Hardness [°Sh A]	Migration wt. loss [%] after 7 days	LOI [%]	Smoke generation D _{s,max}
S-PVC	100	Roflex 50 / 65	260	115	88	0.94	30.2	682.5
		Roflex T70	260	110	88	1.01	29.0	717.5
Plasticizer	25	Roflex T70L	215	100	92	0.72	28.8	584.2
DOTP	25	Roflex T45	270	110	89	0.90	26.5	554.4
Stabilizers	4	Roflex R250	200	105	93	0.60	30.8	460.0

Dedicated applications



Transparent and flexible foils



Roofing membranes



Welding curtain



Transparent PVC films

Compatibility with solid additives

Raw material	Loadings [phr]	Plasticizer / Feature	Elongation [%]	Hardness [°Sh A]	Migration wt. loss [%] after 7 days	LOI [%]	UL-94 3.5 mm
S-PVC	100	Roflex 50 / 65	160	96	0.30	34.5	V-0
Plasticizer	50	Roflex T70	150	97	0.30	34.7	V-0
CaCO ₃	50	Roflex T70L	70	98	0.30	33.6	V-0
Zinc Borate	5	Roflex T45	170	94	0.50	28.9	V-0
Stabilizers	4	Roflex R250	115	98	0.12	34.4	V-0
		DOTP	190	92	0.85	25.0	V-1

Dedicated applications



Semi-rigid PVC sheets



Wire & Cables



Semi-rigid PVC films



PVC flooring

Emulsion PVC pastes

Basic formulation

Raw material	Loadings [phr]	Plasticizer / Feature	Hardness [°Sh A]	Migration wt. loss [%] after 7 days	LOI [%]
E-PVC	100	Roflex 50 / 65	80	0.42	30.8
Plasticizer	70	Roflex T70	83	0.40	30.8
		Roflex T70L	92	0.39	30.5
		Roflex T45	74	0.56	27.1
Stabilizers	4	Roflex R250	87	0.27	31.7
		DOTP	77	1.32	22.2

Compatibility with solid flame retardants

Raw material	Loadings [phr]	Plasticizer / Feature	Hardness [°Sh A]	Migration wt. loss [%] after 7 days	LOI [%]
E-PVC	100	Roflex 50 / 65	83	0.36	32.0
Plasticizer	75	Roflex T70	86	0.44	31.7
CaCO ₃	50	Roflex T70L	92	0.25	31.0
ATH	10	Roflex T45	79	0.52	27.8
ATO	5	Roflex R250	88	0.26	32.3
Stabilizers	4	DOTP	77	1.30	26.0

Dedicated applications



Artificial leather



Coated textiles



Conveyor belts



Tarpaulins



Projection screens

Tailor-made solutions

Crib 5 solution for artificial leather

Raw material	1 st layer	2 nd layer	3 rd layer
E-PVC	100	100	100
Roflex 50 / Roflex T70	60	80	85
CaCO ₃	30	30	30
ATO	5	5	5
ATH	5	10	10
Kicker	-	2	2
Foaming agent	-	4	4

UL-94 V0 ATO-free solution

Raw material	Loadings [phr]	Hardness [°Sh A]	LOI [%]	UL-94 3.5 mm
S-PVC	100			
Roflex T45	45			
ATH	30	93	32.9	V0
ZB	8			
Stabilisers	4			



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The suggestions for product applications are based on our best knowledge.

The responsibility for the use of products in conformity or otherwise with the suggested application, and for determining product suitability for the user's own purposes rests with the user.

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