

ROFLEX SERIES

FLAME RETARDANT PLASTICIZERS IN PVC

GENERAL INFO & USES

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]	Phosphorous content [wt. %]	Feature
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 phosphate	1.04	45	proprietary	Low smoke & low temperature



PRODUCT PERFORMANCE

Plasticizer / Feature	Plasticizing effect	FR efficiency	Low smoke	Surface migration	Paste viscosity reduction	Labelling
Roflex T70	• •	• • •	•	• •	• •	• •
Roflex T70L	•	• •	• •	• •	•	• • •
Roflex T45	• • •	• •	• • •	•	• • •	• • •

• 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 T70	190	85	94	0.29	33.5	30:00
		Roflex T70L	130	10	97	0.26	32.8	37:00
Plasticizer	50	Roflex T45	260	110	88	0.47	29.0	38:30
Stabilizers	4	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 T70	260	110	88	1.01	29.0	717.5
FR 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							

Dedicated applications:

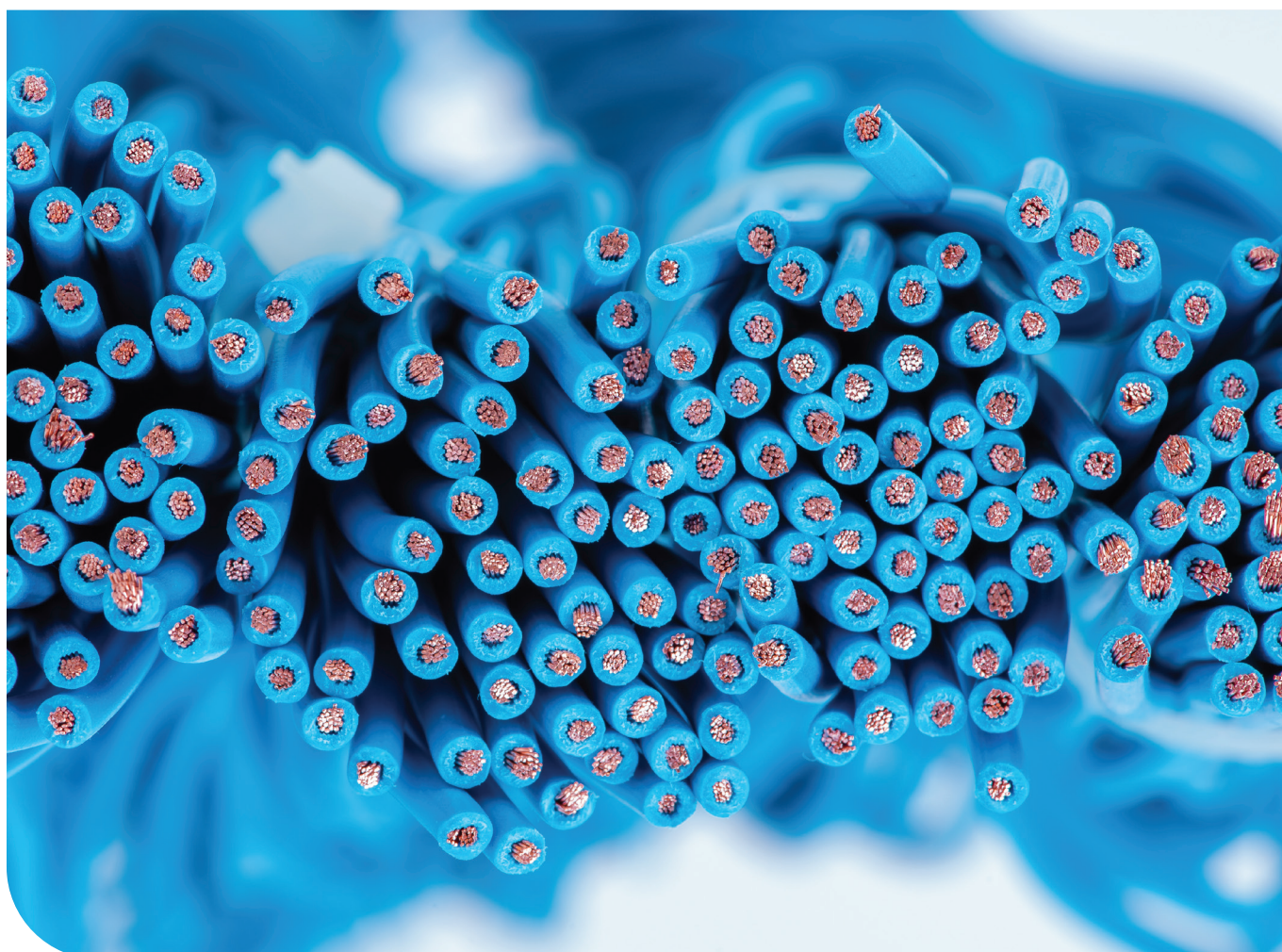
- Transparent and flexible foils
- Welding curtains
- Roofing membranes
- Transparent PVC films

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 T70	150	97	0.30	34.7	V-0
Plasticizer	50	Roflex T70L	70	98	0.30	33.6	V-0
CaCO ₃	50	Roflex T45	170	94	0.50	28.9	V-0
Zinc Borate	5	DOTP	190	92	0.85	25.0	V-1
Stabilizers	4						

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 T70	83	0.40	30.8
Plasticizer	70	Roflex T70L	92	0.39	30.5
		Roflex T45	74	0.56	27.1
Stabilizers	4	DOTP	77	1.32	22.2

Plasticizer / Feature	Initial plasticizer viscosity [mPa*s] at 25°C	Paste viscosity after 1h [mPa*s] at 25°C	Paste viscosity after 1h [mPa*s] at 40°C
Roflex T70	70	14 300	6 400
Roflex T70L	310	28 200	8 800
Roflex T45	45	13 500	5 300

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 T70	86	0.44	31.7
Plasticizer	75	Roflex T70L	92	0.25	31.0
CaCO3	50	Roflex T45	79	0.52	27.8
ATH	10	DOTP	77	1.30	26.0
ATO	5				
Stabilizers	4				

Dedicated applications:

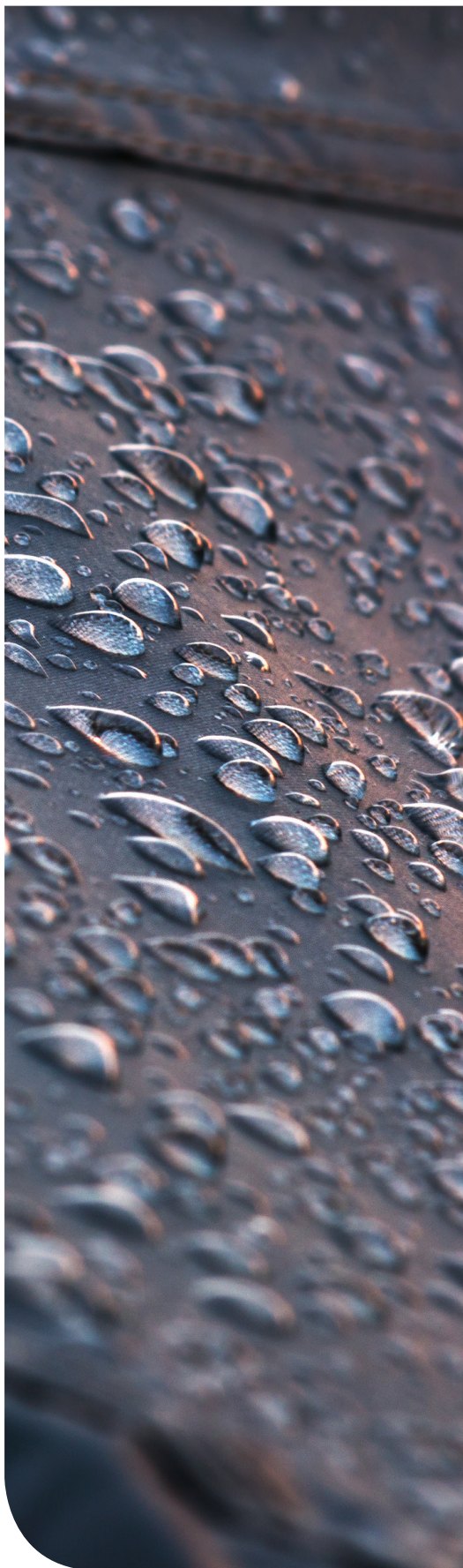
- Artificial leather
- Coated textiles
- Conveyor belts
- Tarpaulins
- Projection screens

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 T70	60	80	85
CaCO ₃	30	30	30
ATO	5	5	5
ATH	5	10	10
Kicker	-	2	2
Foaming agent	-	4	4





PCC Rokita SA
Sienkiewicza St. 4
56-120 Brzeg Dolny, Poland
products@pcc.eu

Please visit our capital group
business platform:
www.products.pcc.eu

July 2023



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