

Pano Blueseal[®]-Compound K*

Migrationdata according VO EU 10/2011

Designation: Provalin[®] **Manufacturer:** Actega DS GmbH, Bremen, Germany

Description: Sealing-gasket based on thermoplastic elastomers (TPE).

1. Closure-specific global migration

For closures types: RUP, RUB, T, Ts, TWS, TSB, DTO, DOB

Conditions: 1 h 131°C and 10 d 60 °C

Closure type	Diameter [mm]	Simulant A 10% ethanol		Simulant B 3 % acetic acid		Simulant D1 50% ethanol	
		Average global migration [mg]	Mimumum jar volume 60 mg/kg [ml]	Average global migration [mg]	Mimumum jar volume 60 mg/kg [ml]	Average global migration [mg]	Mimumum jar volume 60 mg/kg [ml]
RUP/RUB	38	1,6	30	1,1	20	4,4	75
T/Ts	45	2,2	35	1,5	25	5,9	100
TWS/TSB DTO/DOB	48	2,1	40	1,4	25	5,5	90
	53	2,4	45	1,6	30	6,5	110
	58	2,7	50	1,8	30	7,1	120
	63	3(M)	55	2(M)	35	8(M)	130
	66	3,2	55	2,1	35	8,4	140
	70	3,4	60	2,3	40	9,0	150
	77	3,7	60	2,5	45	10,0	170
	82	4,0	70	2,7	45	10,7	180

(M) measured value; The values for the other lid-diameters are calculated based on compound-contact-areas.

Conditions: : 1 h 131°C and 10 d 60 °C

Closure type	Diameter [mm]	Simulant D2 olive oil	
		Average global migration [mg]	Mimumum jar volume 60 mg/kg [ml]
RUP/RUB	38	4,9	80
T/Ts	45	6,6	110
TWS/TSB DTO/DOB	48	6,2	100
	53	7,3	125
	58	8,0	135
	63	9(M)	150
	66	9,5	160
	70	10,1	170
	77	11,2	190
	82	12,1	200

(M) measured value; The values for the other lid-diameters are calculated based on compound-contact-areas.

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2. Specific migration

Blue Seal[®]-Compounds do not contain PVC and no phthalates.

Substances with a specific migration limit

The compound contains following substances with a specific migration limit

FCM	PM-Ref	Substance	CAS-No.	restriction
144	21640	2-methyl-1,3-butadiene	78-79-5	QM = 1mg/kg FP; SML = n.d.
223	13630	butadiene	106-99-0	QM = 1mg/kg FP; SML = n.d.
433	68320	octadecyl-3-(3,5 Di-tert-butyl-4-hydroxyphenyl)propionate	2082-79-3	SML = 6 mg/kg
661	95360	1,3,5-Tris(3,5-di-tert-butyl-4-hydroxybenzyl)-1,3,5-triazin-2,4,6(1H,3H,5H)-trione	27676-62-6	SML = 5 mg/kg
760	83595	Product of reacted di-ter-butylphosphonite with biphenyl	119345-01-6	SML = 18 mg/kg

The compound contains furthermore components where the generic SML of 60 mg/kg according art. 11 (2) can be applied. The identity of these components is confidential but may be communicated to independent testing institutes in necessary cases.

Based on the amount of substances in the compound even in cases of a total migration it is not expected that the specific limit may exceed.

3. Final Evaluation of the migration results

Assumed that the compound will be used for a closure with a diameter of 63 mm on a 200 ml size jar with a total inside surface of 195 cm² 1 following data can be calculated

Conditions: 1h 131°C and 10 d 60°C

Simulant	mg/ closure	mg/kg food
A 10% ethanol	3(M)	15
B 3% acetic acid	2(M)	10
D1 50 % ethanol	8(M)	40
D2 oliveoil	9(M)	45

(M) Measured value

In general every type of compound has to be tested on its suitability for the individual food.

4. DUAL USE Additives

The compound contains according its formulation following substances which may also be used as food-ingredients

FCM	PM Ref	designation	CAS-No.	E-No.
106	89040	sodium-, potassium- and calciumsalts of fatty acids	--	E470a
504	86240	Silicon-dioxide	7631-86-9, 112945-52-5	E 551
571	79280	Polythylenglycol sorbitanmonostearate	9005-67-8	E 435