



Sicopal® Black K 0098 FK

**Smarter choice for efficient
plastics recycling!**

Launch Presentation - external



**COLORS &
EFFECTS**

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- Product at a glance
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Product at a Glance

Sicopal® Black K 0098 FK

Value Proposition:

- Sicopal® Black K 0098 FK is newly optimized version of C.I. PBr 29, which offers high color strength and opacity.
- Designed to enable sorting of colored plastics for recycling, e.g. in polyolefin and PET.

Coloristics:

- High opacity and color strength
- Slightly reddish undertone in reflection and neutral shade in transmission

Properties in use:

- NIR-reflectivity enables sorting for recycling
- Stable after multiple processing for closed loop recycling
- Suitable for PO and EPL (e.g. PA, PET, PC) including high heat polymers
- No migration and warping

Food contact compliance:

- Food contact compliant with EU Regulation 10/2011 and JHOSPA.
- US FDA and China GB9685. 2016 are under review

Product Property & Positioning

Detection of Carbon Black in PET

- Sample: Carbon Black in PET (thickness 0.4 – 1.2 mm)

0.1 % Carbon Black



Not detected

0.05 % Carbon Black



Not detected

0.01 % Carbon Black

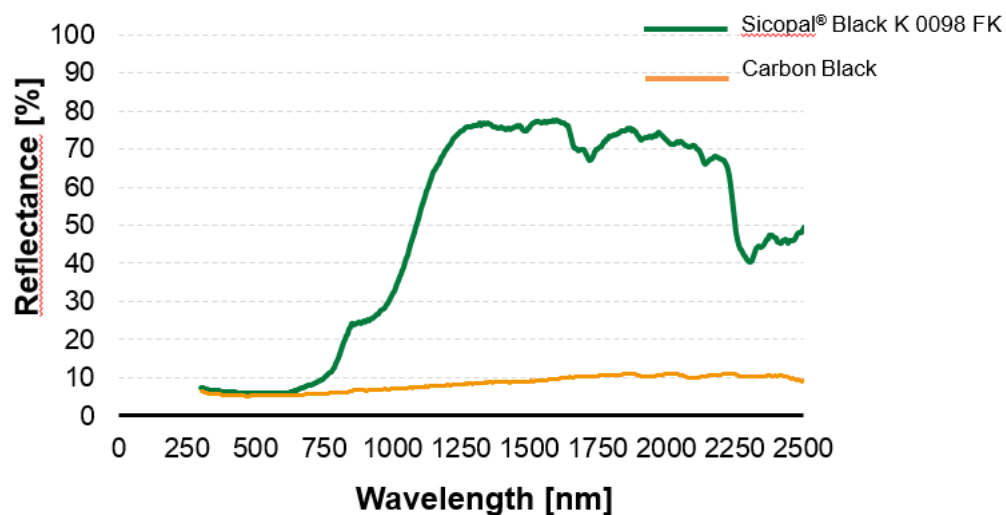


Partially
detected

No Identification of polymers even at low concentration of Carbon Black!

Product Property & Positioning

Sicopal® Black K 0098 FK



Detectable with NIR Spectroscopy?			
	PET	PP	PS
Sicopal® Black	✓	✓	✓
Carbon Black	✗	✗	✗

- Even traces of carbon black can hinder NIR-sorting of polymer scrap
- Sicopal® black pigments are NIR-reflective & allow the reliable detection of the polymer even at high pigment content

Product Property & Positioning

Sicopal® Black K 0098 FK

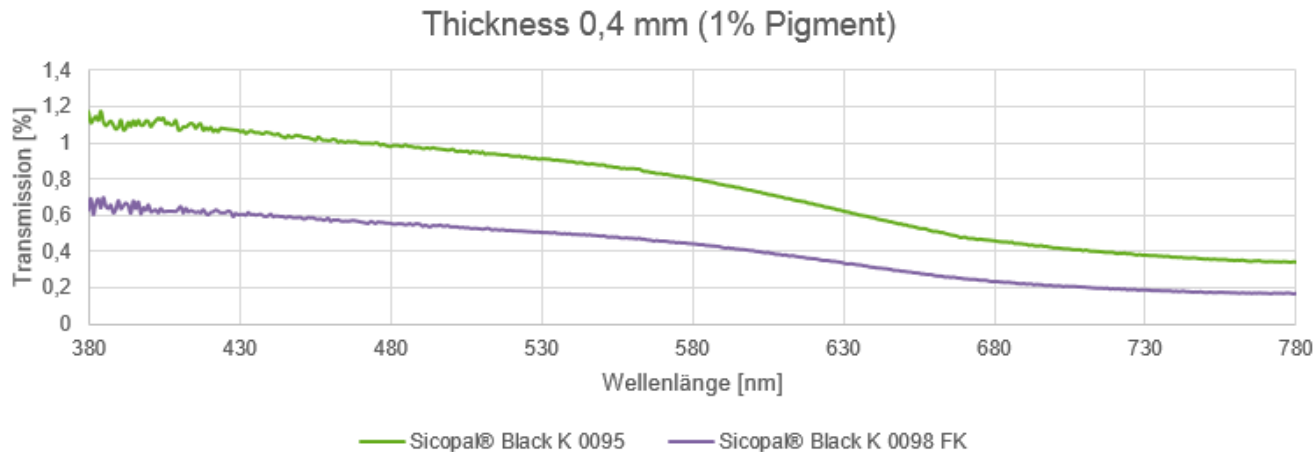
- NIR reflective to allow sorting of black plastics for recycling
- Sorting ability is proven on an industrial sorting machine
- Excellent heat stability allows use in polyolefins, PET and engineering plastics
- Improved strength and opacity vs. Sicopal® Black K 0095 (+20-30%) → Higher value in use
- Reduced Lightness
- Color can be shaded with NIR transparent colorants to more neutral and darker black shade as required

Product Property & Positioning Opacity

■ Contrast ΔE

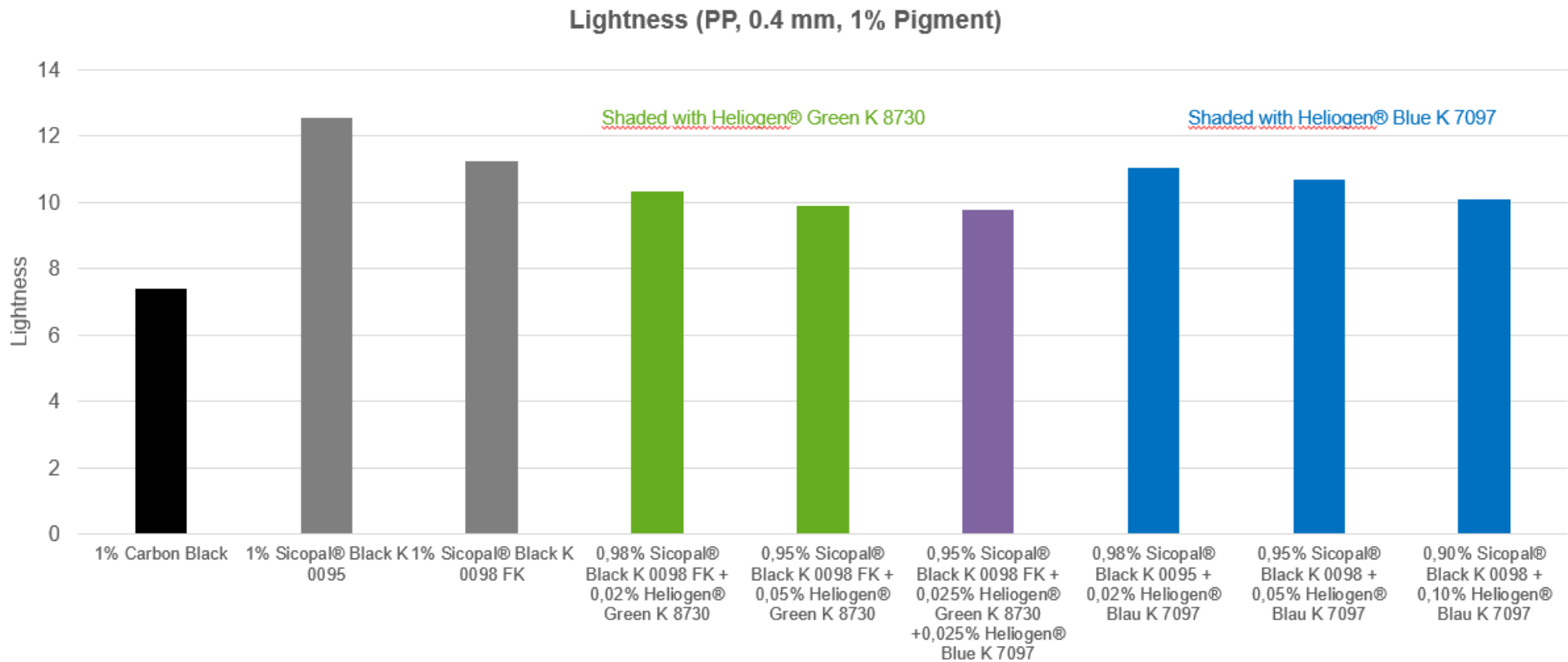
Tested in PP	h	C*	L*	a*	b*	ΔH^*	ΔC^*	ΔL^*	Δa^*	Δb^*	ΔE^*
1% Sicopal® Black K 0095 WS 0,4mm	2,9	4,3	12,6	4,3	0,2						
1% Sicopal® Black K 0095 SW 0,4mm	6,6	4,6	11,5	4,6	0,5	0,3	0,3	-1	0,2	0,3	1,1
1% Sicopal® Black K 0098 FK WS 0,4mm	4,9	4,8	11,2	4,8	0,4						
1% Sicopal® Black K 0098 FK SW 0,4mm	7,8	5,1	10,6	5,0	0,7	0,3	0,3	-0,6	0,2	0,3	0,7

■ Transmission

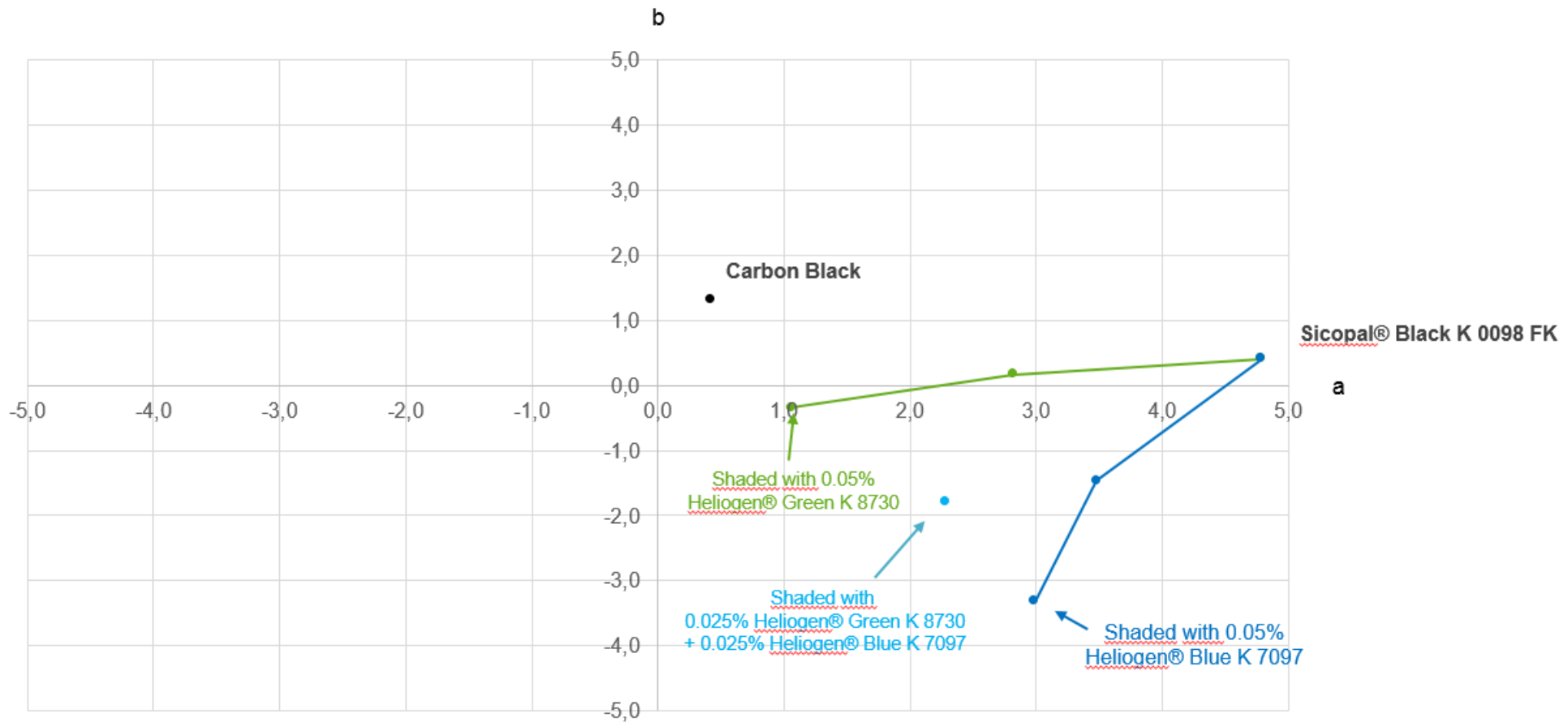


Product Property & Positioning

Coloristics in PP (0.4 mm, 1% Pigment)

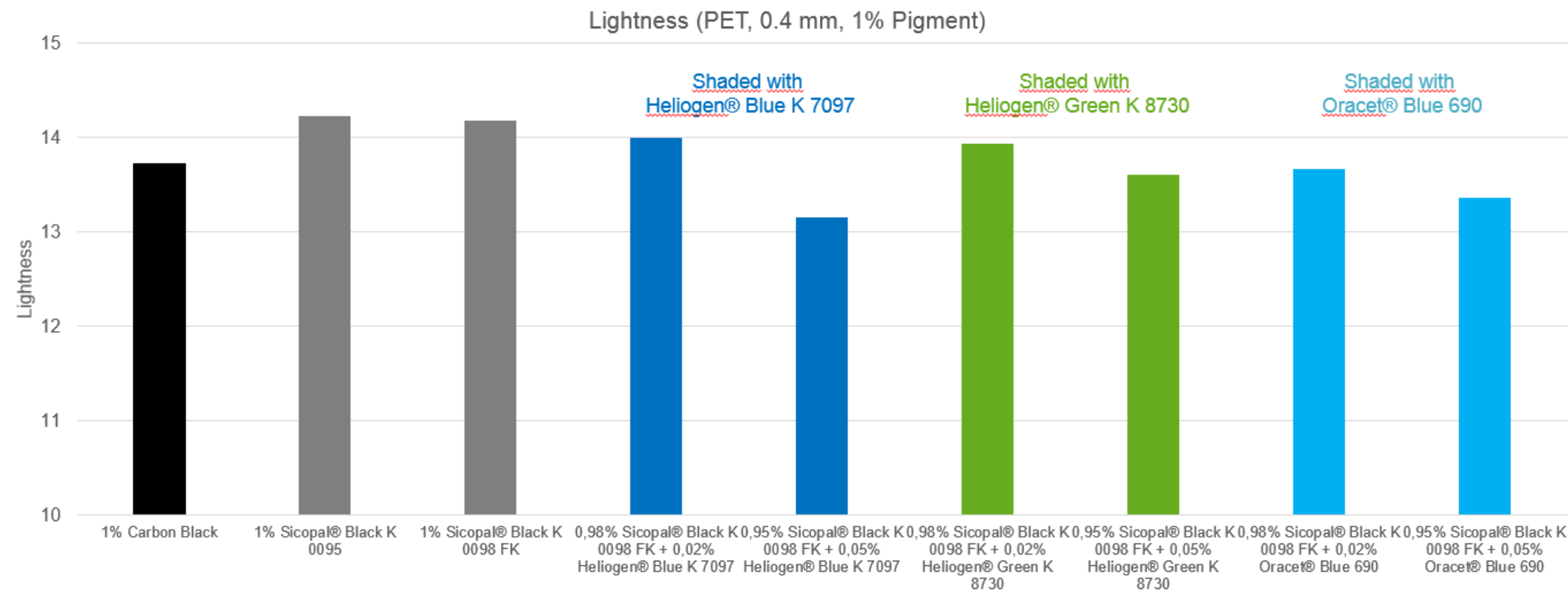


Product Property & Positioning Coloristics in PP (0.4 mm, 1% Pigment)

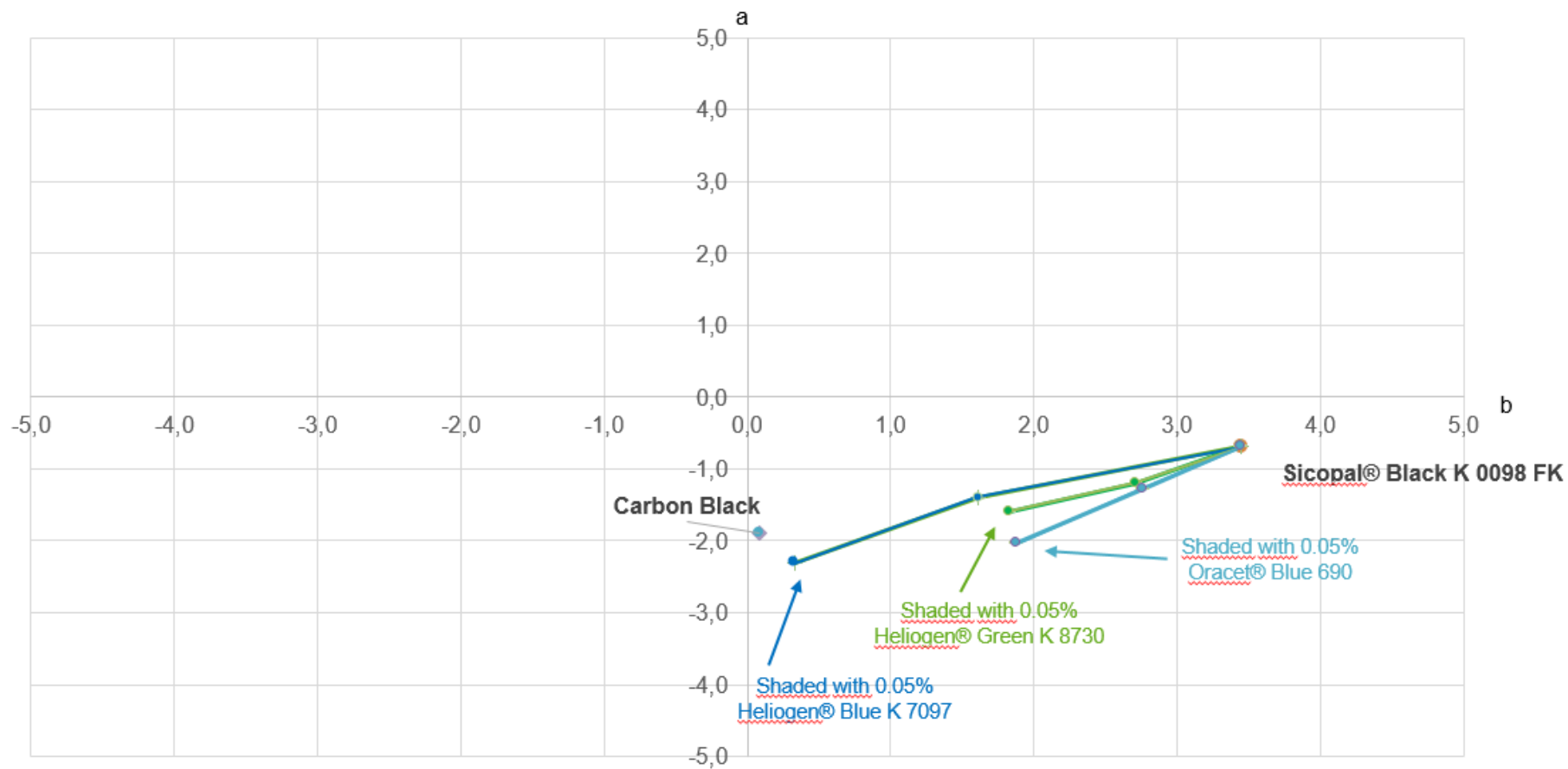


Product Property & Positioning

Coloristics in PET (0.4 mm, 1% Pigment)



Product Property & Positioning Coloristics in PET (0.4 mm, 1% Pigment)



Product Property & Positioning

Heat Stability

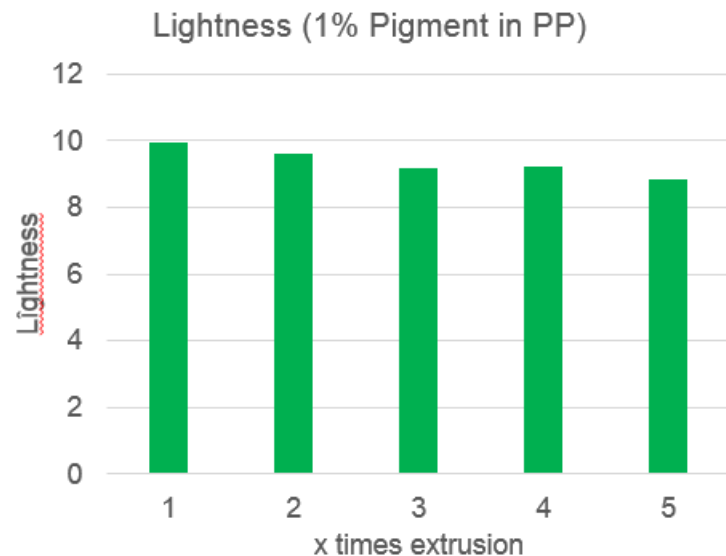
■ Heat stability [°C] tested in different polymers ($\Delta E < 3$)



Product Property & Positioning

Sicopal® Black K 0098 FK: The Black Pigment for Closed Loop Recycling

- Good processing stability even after multiple processing steps
- High heat stability, suitable for almost all polymers
- Excellent durability, useful for several product life cycles



Product Property & Positioning

Target Applications & Compliance Status

■ Target applications

- Industrial applications, where higher tinting strength is important
- Food contact applications
 - Packaging with PO → PP trays (for micro-wave)
 - Packaging with PET → C-PET trays and containers (for micro-wave and oven applications)

■ Compliance status

- Sicopal® Black K 0098 FK is suitable for food contact use in Europe and Japan. Food contact compliance to US and China are still in progress. FCC is available
- Sicopal® Black K 0098 FK is compliant to AP (89) 1, EN 71-3, 94/62/EEC and CONEG regulating heavy metal content

EU 10/2011	US FDA	China GB 9685	JHOSPA	Toy EN71.3-2013
✓	In progress	In progress	✓	✓

Product Property & Positioning Sustainability

- Clean product for packaging supported by internal specifications controlling its purity
- High purity fulfilling requirements from foot contact and toys regulations
- No decomposition or formation of NIAS during processing
- High pigment stability during multiple processing steps allows more product life cycles
- Enable colorful formulations to be recyclable
- Better carbon foot print compared to carbon black due to lower energy in manufacture and making plastics waste recyclable.