

## KUBE PIR Transmissive Plastic Injection Molding Granulates

For fresnel lenses and windows of PIR motion detectors, thermal imaging cameras and non-contact thermometers

### Features:

- The best material for fresnel lenses
- Specially suited for thin parts
- High transmission in the 7 to 14  $\mu\text{m}$  central passive infrared (PIR) band
- Choice of colors and MFI
- RoHS and TSCA conform
- Excellent visible light absorption available for low false alarm rate / VDS conformity
- Special colors available on request
- According to KUBE's experience, these materials exhibit no substantial loss of specification over 10 years



### Opaque (natural color of the material)

Kube Type	Stock	MFI	Attenuation % per 1/10mm			UV	Fla	Remarks
			IR	Stray	Coll			
<b>22300</b>	<b>P</b>	17	8.5	4	22	Y	Y	standard material for opaque lenses used indoors
<b>22302</b>	<b>P</b>	17	10	4	22	YY	Y	the best choice for outdoor applications including a unique mix of UV and aging stabilizers
22310	R	27	8.5	4	22	Y	Y	22300 with higher MFI for molding of thin parts
<b>22312</b>	<b>P</b>	27	10	4	22	YY	Y	22302 with higher MFI for molding of thin parts

### White

Kube Type	Stock	MFI	Attenuation % per 1/10mm			UV	Fla	Remarks
			IR	Stray	Coll			
21820	R	17	10	30	87	N	Y	for applications where the material is not exposed to light over long periods
21821	R	17	9	14	65	N	Y	
22378	Ø	17	27	32	82	YY	Y	replaced by 22400a
22380	Ø	17	17	19	74	YY	Y	replaced by 22401
22403	R	17						for food and skin contact

## White Super-White. Long-term stable. The best choice for white lenses

Kube Type	Stock	MFI	Attenuation % per 1/10mm			UV	Fla	Remarks
			IR	Stray	Coll			
<b>22400a</b>	<b>P</b>	17	15	26	85	YY	Y	best for white lenses with excellent IR transmission and outdoor stability
<b>22401</b>	<b>S</b>	17	11.5	13.5	64	Y	Y	whitish (60% 22300 + 40% 22400a)
22402	R	17	10	9	48	Y	Y	whitish (75% 22300 + 25% 22400a)
<b>22404</b>	<b>S</b>	17	13	20	78	YY	Y	white (30% 22300 + 70% 22400a)
<b>22405</b>	<b>S</b>	17	11	9	53	YY	Y	whitish, outstanding long-term stability
<b>22414</b>	<b>S</b>	27	13	20	78	YY	Y	22404 with higher MFI for molding of thin parts

## Ivory

Kube Type	Stock	MFI	Attenuation % per 1/10mm			UV	Fla	Remarks
			IR	Stray	Coll			
20490	R	17	16	26	85	Y	Y	

## Black

Kube Type	Stock	MFI	Attenuation % per 1/10mm			UV	Fla	Remarks
			IR	Stray	Coll			
<b>40253</b>	<b>S</b>	17	10	>35	>60	Y	Y	low density black / smoky
<b>40700</b>	<b>S</b>	17	16	>73	>91	YY	Y	dense black
<b>40702</b>	<b>S</b>	17	10.5	21	38	YY	Y	low density black / smoky
<b>40703</b>	<b>S</b>	17	11.2	22	41	YY	Y	low density black / smoky

## Blue

Kube Type	Stock	MFI	Attenuation % per 1/10mm			UV	Fla	Remarks
			IR	Stray	Coll			
30302	R	17	10	10	40	YY	Y	MysticBlue (misty bluish)

## Color correction Add in small quantity for off-white nuances

Kube Type	Stock		Color			Remarks
20424	R		beige			
20316	R		gray			
40253	R		light black			

## Concentrates of KUBE pigments and stabilizers

Add to natural granulates as required

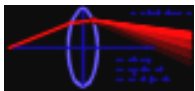
Kube Type	Stock		Color	UV	Fla	Remarks
24974	R		white	N	Y	the concentrate of 21820
<b>26342</b>	<b>S</b>		super - white	YY	Y	the concentrate of 22400a
<b>40258</b>	<b>S</b>		black	YY	Y	highest concentrate of black
<b>40260</b>	<b>S</b>		black	YY	Y	5:1 diluted version of 40258

## Glossary

- Stock** **P** preferred stock item **S** standard stock item **Ø** obsolete  
**R** available on request (minimum quantities may apply)
- MFI** Melt Flow Index measured in g / 10min. (190°C – 2.16 kg, ISO 1133)
- Att...** Transmission data are % per 1/10 mm, excluding surface reflections (bulk only).
- IR** Infrared attenuation in the central 7 to 14µm (Microns) PIR band.
- Stray** Attenuation of visible light at 555nm wavelength, considering reflection losses.
- Coll** Attenuation of a collimated beam of 555nm wavelength, considering straylight losses. The test arrangement corresponds to a motion detector with 22mm focal length.  
The number indicates the portion of a narrow beam that reaches the sensor, excluding surface reflections.
- UV** **N** Not recommended for extended use under daylight conditions  
**Y** UV and light protection adequate for indoor use  
**YY** recommended products for outdoor use
- Fla** **Y** Flame retardant to IEC 695-2-1

KUBE plastics are not certified for permanent skin contact or similar medical applications.

## Technical information



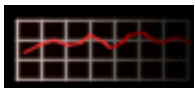
Optical, thermal and mechanical properties

[www.kube.ch/downloads/pdf/kube\\_plastics\\_properties.pdf](http://www.kube.ch/downloads/pdf/kube_plastics_properties.pdf)



Processing of injection molding granulates

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Long term stability and answers to FAQ

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How to fix, glue and weld

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Flammability

[www.kube.ch/downloads/pdf/kube\\_plastics\\_flammability.pdf](http://www.kube.ch/downloads/pdf/kube_plastics_flammability.pdf)



Material safety data sheet

[www.kube.ch/downloads/pdf/kube\\_plastics\\_safety.pdf](http://www.kube.ch/downloads/pdf/kube_plastics_safety.pdf)

Please ask to discuss your application.

All granulates can be mixed. However, depending on the type of injection machine, inhomogeneous surface structures (striae) may appear when mixing different colors. Therefore, KUBE offers custom premixed products from 200 kg upwards.

Standard products are available per kg or per pallet, refer to the price list

[www.kube.ch/downloads/pdf/kube\\_granulates\\_prices.pdf](http://www.kube.ch/downloads/pdf/kube_granulates_prices.pdf)