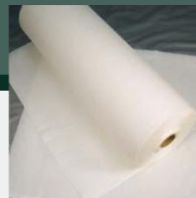
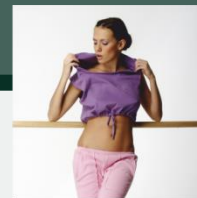




Paint



Paper barrier coatings



Textile/leather coatings



Anti corrosive primers

SharkPellets™

Is the trade name for Shark Solutions granules made of 100 % post-consumer recycled PolyVinyl Butyral in various grades.

PVB = Polyvinyl Butyral is a halogen-free elastomer, which does not contain chlorine, corroding agents or any phthalates and TSCA listed components.

PVB itself works as an adhesive hot melt, and can be used on glass, concrete, ceramics etc. The hot melt adhesive can be used as known in laminated glass "gluing" or elsewhere in gluing non-diffusion open materials.

Due to excellent thermoplastic properties it can be used in pure form in standard plastic procedures – like injection moulding and extrusion or in composition with fillers to form composite materials or in a compounded blend with specialized properties.

By mixing in extruder it can be mixed with PU (polyurethane), PE (polyethylene), PP (Polypropylene), Polyaniline, PMMA, PA6, PVC as it is fully compatible and valuable for application in master batches.

To adjust melting properties, viscosity, flow and strength PVB can be compounded with resins, (like Escorez), polymers like Vestoplast, and reactive polymers like Fusabond, Elvaloy or other grafted polymers.

Sometimes a compatibilizer like maleic acid anhydride, or maleic acid-grafted- polymers must be used, but all based on the desired properties of the PVB.

Hot melt compositions can be used in road striping materials, adhesive for architectural parts and for permanent fixing of cracks and damages.

Also resins like epoxy, isocyanate, phenolic modified resins, shellac and silicone can be used with PVB.

PVB can be dissolved in a mix of several alcohols as ethanol, butanol a.o. to form liquid solutions of the adhesive blend to be used for impregnation and gluing of diffusion open materials.

Physical properties of PVB:

Melting point: 180 – 190°C
PVB becomes sticky at 28°C.
PVB becomes brittle below -30°C

Table 1 MFR for SharkPellets

Conditions	Melt flow index g/10 min
150° - 2.16 kg	0.9
190° - 2.16 kg	2.6
190° - 5 kg	7.1
230° - 2.16 kg	8.2
230° - 5 kg	26.1





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Table 2 MFR for SharkPellets compounded with 50% filler

Conditions	Melt flow index g/10 min
150°C - 2.16 kg	0.02
150°C - 5.0 kg	0.11
190°C - 2.16 kg	1.2
190°C - 5.0 kg	9.4

PVB reach the best adhesive ability at 200°C but it is recommended to limit the time the polymer is heated to this temperature to less than 5 minutes. Reaction with oxygen in the surrounding air begins at 140°C and becomes a problem at temperature exceeding 220 - 230°C as the material slowly decomposes, loose elasticity and becomes discolored of the oxidization products. Unwanted "cinders" can be composed if PVB is piling up on the forming tool at high temperatures.

Glass transition temperature 17.3°C (centre point) with an onset value of 3.8 °C see fig.1

Specific heat capacity at 50°C: 1.3 J/g °C

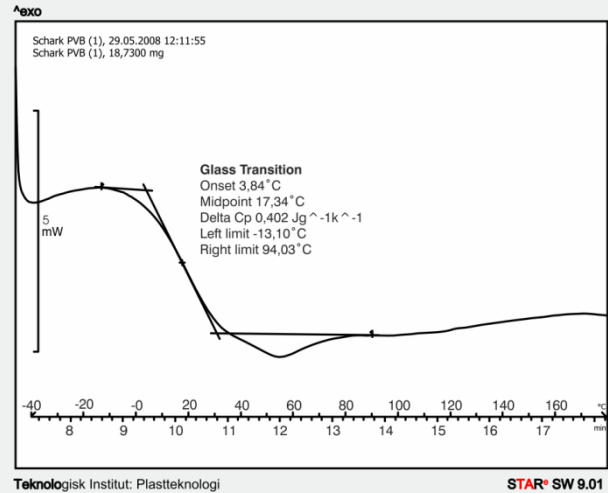


Figure 1

Determination of Oxygen time OIT has been carried out according to EN 728, 1997 and has a value of 0.3 min – see fig 2, and can be modified by anti-oxidizing agents.

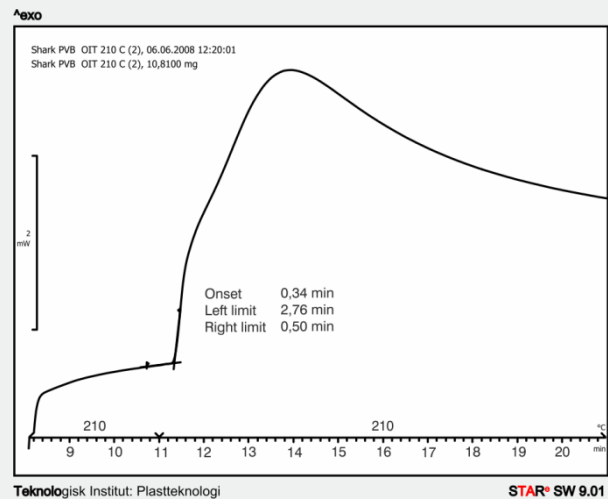


Figure 2

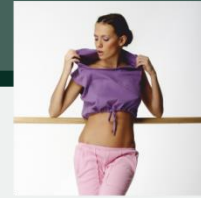




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SharkPellets are available in 4 grades:

SharkPelletsC3™:

Filtered to remove contamination over 130 microns.

Moisture < 2 %.

Treated with non-sticking additive.

Colour: Dark grey, dusted white.



Treated with non-sticking additive.

Colour: Dark grey, dusted white.



SharkPelletsC5c™:

Postindustrial PVB

Filtered to remove contamination over 50 microns.

Moisture < 2 %.

Treated with non-sticking additive.

Colour: Colourless, dusted white



SharkPelletsC2™:

Filtered to remove contamination over 130 microns.

Moisture < 2 %.

Treated with non-sticking additive.

Colour: Natural, dusted white.



Standard packaging for SharkPellets is Big Bags of 550 kg.

SharkPelletsC4c™:

Postindustrial PVB

Filtered to remove contamination over 50 microns.

Moisture < 2 %.

February 2016

