

ABS
ViSpec™ HI 6100
Product Datasheet

Esform 5-200
Version 3 26/06/2013

Description

ABS (Acrylonitrile Butadiene Styrene) has very good toughness with a high degree of rigidity, and heat resistance. It is suited for both vacuum and pressing forming.

ViSpec HI 6100 is our general purpose, virgin material that suits most applications, where robustness is paramount.

Applications

Automotive parts, technical articles, construction, industrial, machinery and tool housing.

Key Features

Impact/Stiffness

Has very good impact compared to most other polymer types. High modulus/stiffness.

Thermoforming

Easy to thermoform. It has a broad visco-elastic range that gives good melt strength over a large temperature range.

Product Availability

Colour

Standard range of colours and customer colour matches.

Finish

Natural smooth, a range of matt surfaces and a range of embossed finishes.

Thickness

1.5mm to 9mm

Sheet Size Specifications

Gauge	Width	
	Minimum	Maximum
1mm to 9mm	350	1500

NB: available sizes may vary depending on gauge, colours, embosses and order size, please ask confirmation to sales department.

Alternative Solutions

Recycled grade (ViSpec Eco 6400) is available for cost effective solution when aspect is not critical. Not able to dry ABS? Then consider our ViSpec LT 5820 product, which has similar impact properties to ABS, without the necessity of drying.

Disclaimer

The information contained in this leaflet is based on our present technical knowledge and experience. In view of the large number of factors that may influence the processing and use of our products, the information does not relieve the processors and manufacturers of the need to carry out their own tests and experiments. Our information does not constitute a legally binding assurance of product availability, of particular properties or of a suitability for a particular use. Patent rights that may exist must be duly observed.

Typical physical properties

Properties	Unit	Standard	Method	Value
Density #	g/cm3	ISO 1183	-	1.06
Impact Izod Notched	KJ/M2	ISO 180	1A at 23°C	≥19
Tensile Strength	MPa	ISO 527	50mm/mim	42
Tensile Modulus	MPa	ISO 527	1mm/mim	2100
Elongation at Break	%	ISO 527	50mm/mim	3
Flexural Strength	MPa	ISO 178	2mm/min	69
Vicat Softening Point	°C	ISO 306	B50/oil	≥98
Heat Distortion Temperature	°C	ISO 075	HD T/A 1.8MPa	≥97
Flammability Rating	Rating	UL94	2.0mm	HB

#The density quoted should be used as a guide. This value can change depending upon the type and quantity of pigments or additives used.

Additional Information

Thermoforming

Ideally mould draft angles between 4-6% and allow for 0.6-0.8% post mould shrinkage. Typical forming temperatures are between 150-185°C. During thermoforming the use of a heated steel or aluminium mould is strongly advised. Moulding Radii should at least be the same magnitude as the residual wall thickness.

Storage

If sheet is stored in humid conditions for long periods then it should be dried before thermoforming, ideally at 80° for approximately 2 hours, plus an additional hour for every 1mm thickness. It is essential that enough space be left between the sheet (20-30mm) to allow correct drying. The time lapse between drying and forming should be minimised in order to save energy and reduce heating times. If sheets are left to stand at room temperature for a long period of time they may need to be re-dried.

Certification / Approvals

The following approvals are only available on request:

ROHS: European Legislation 2002/95/EC

UV Resistance

Natural ABS when exposed to direct UV may discolour and become brittle in a matter of months. Black pigmented sheet will improve UV resistance. An additional of a UV stabiliser can further improve its longevity. For significantly higher protection then alternatives like PMMA (Acrylic) capped ABS (ViSpec Sun 6700) and ASA (ViSpec W 6610) should be considered.

Cleaning and Maintenance

Most common soaps or detergents dissolved in warm water can be used to effectively clean general dirt and surface contaminants. More stubborn solvent based markings i.e ink, marker pen, etc. Can be removed using detergents but will probably require the stiff bristled brush or slightly abrasive pad to remove stains or markings if material is affected deep in the surface emboss. If the above doesn't work then try iso-propyl-alcohol or n-heptane. Abrasive scouring powders should be avoided. Areas of mouldings that have been dulled through cleaning can be restored using silicone based polishes.

Chemical Resistance

Chemical resistance is influenced by many factors, including concentration, temperature, exposure time and material stress. Therefore the data below should only be used as a guide.

Reagent	Chemical resistance	Reagent	Chemical resistance
Acetone	Not recommended	Brake Fluid	Not Recommended
Acid (Weak)	Excellent	Butter	Excellent
Acid (Strong)	Good	Coffee	Excellent
Alcohol	Good/Fair	Detergent	Excellent
Anti-freeze	Excellent	Diesel	Good
Base (Weak)	Excellent	Foodstuffs	Good
Base (Strong)	Good	Lubricating Oil	Very Good
Battery Acid	Good	Petrol	Good

VitasheetGroup

Charta House
30 - 38 Church Street
Staines
TW18 4EP
United Kingdom
www.vitasheetgroup.com

Esbjerg

Hyrassivej 12
DK - 6862 Tistrup
Denmark
Tel: +45 75 29 19 00
www.vitasheetgroup.com

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