



**Apex**<sup>®</sup>  
Quality Polymer Solutions

# ABS & HIPS

**Apex<sup>®</sup> Polymer Solutions (Pty) Ltd\***

Website: [www.apexpolymers.co.za](http://www.apexpolymers.co.za)

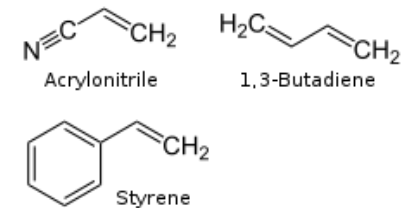
Tel: 087 562 9800

Email: [info@apexpolymers.co.za](mailto:info@apexpolymers.co.za)

*\*Previously trading as Perspex SA*

# ABS - (Acrylonitrile Butadiene Styrene)

ABS is an engineering thermoplastic material **locally manufactured** by Perspex SA that combines the **strength and rigidity** of acrylonitrile and styrene polymers with the **toughness** of polybutadiene rubber. Ideal for applications where toughness and durability are of key importance.



The chemical properties of ABS plastic give it a **relatively low melting point** and a **low glass transition temperature**, meaning it can be **easily melted down** and **molded into different shapes** during the **vac forming process**. ABS can be **repeatedly melted down** and **reshaped** without significant chemical degradation, meaning the plastic is **recyclable**. Recycled ABS can be **blended with virgin material** to produce **cost effective** products whilst **preserving the quality**.



# ABS - Benefits

ABS is **relatively safe to handle** as it cools down and hardens, making it one of the **easiest plastics to handle**, machine, paint, sand or otherwise manipulate.

## Other Benefits:

- High rigidity
- Strong impact resistance, even at low temperatures
- Strong heat resistance
- Insulating properties
- Shock absorbent
- Abrasion and stain resistant
- Dimensional stability
- Scratch resistant
- Surface brightness



# ABS - Product Variants



- ❑ Virgin ABS
- ❑ Capped/PMMA ABS
- ❑ Fire Retardant ABS
- ❑ UV Stable ABS
- ❑ Decorative ABS
- ❑ Matt Capped ABS



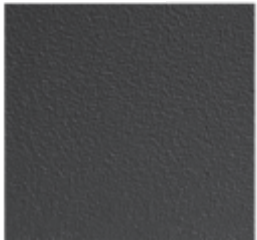
# ABS - Virgin

Virgin, very high impact designed for an optimum performance combining easy processability with excellent mold definition. Exhaustive list of applications including parts for the automotive and industrial sectors. High gloss to extra matt finishes in smooth and textured.

- ❑ High gloss surface to extra matt finishes
- ❑ Smooth & textured finishes
- ❑ Excellent thermoforming properties



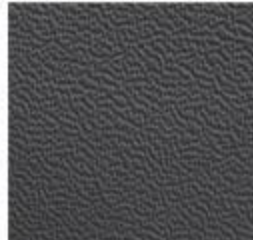
Sand



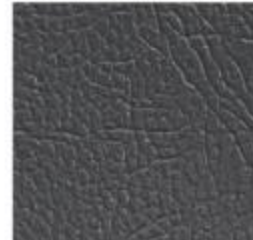
Prismatic



Pinseal



Leathergrain



# ABS

## Technical Info:

- Maximum working temperature continuous: 80 °C
- Heat distortion temperature: 95 °C
- Softening point: 99 °C
- Vacuum forming temperature: 150 °C
- Mould shrinkage: 0.5%
- Specific Gravity: 1.1 (ABS V0 - 1.2)
- Impact Strength: 14 (Charpy unnotched Kj.m-2)



# ABS - Laser Cutting & Engraving ABS



*Video footage courtesy of L & E Enterprises*



# ABS - Acrylic Capped ABS/ PMMA



Acrylic Capped ABS sheet (PMMA/ABS) offers the excellent chemical and abrasion resistance of ABS along with the high gloss UV stability of Acrylic.

This range possesses all the benefits of ABS with an added high gloss finish and improved lifespan and is ideal for external applications.

Ideal Applications include radar domes, automotive moldings and sanitary ware.

- ❑ Great chemical resistance
- ❑ High gloss surface
- ❑ Excellent thermoforming properties
- ❑ UV stable





# ABS- VO & PC/ABS

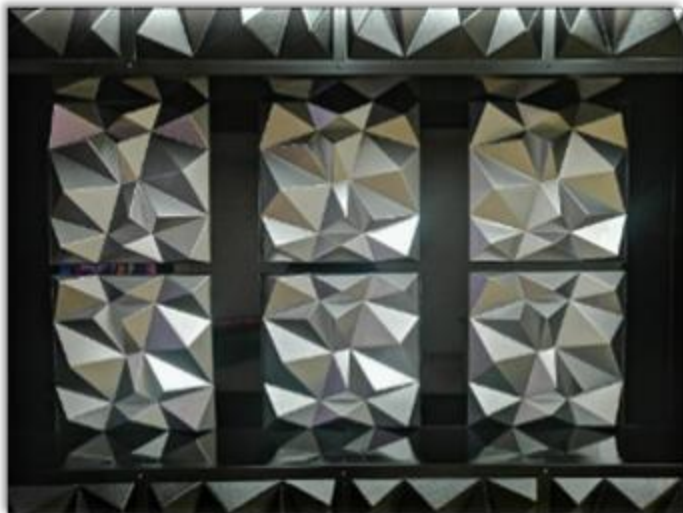
ABS VO is **fire retardant** sheeting that has an element of UV resistance and is used in the production of mass transit vehicles such as trains and coaches. It can be **manufactured locally** in **any colour** required as long as there is sufficient volume. We also offer PC/ABS, a Polycarbonate ABS blend which is regarded as a new advanced version of ABS VO with increased properties.

- ❑ Tough, durable and UV resistant
- ❑ Fire retardant
- ❑ Impact & chemical resistant
- ❑ Good scratch resistance
- ❑ Easy to clean
- ❑ Excellent thermoforming properties



# ABS - Decorative Foils

Decorative foils in PVC, PVDF and PMMA laminated on high impact ABS. Wood finishes and various effects including metal and faux carbon-fibre, **fully thermoformable** and demonstrating **high impact strengths** and **UV stability**. A wide variety of applications from doors to roof-boxes and seat-backs to motorcycle accessories. This range provides greater chemical resistance and "anti-graffiti" capabilities.



# ABS - Endless Applications

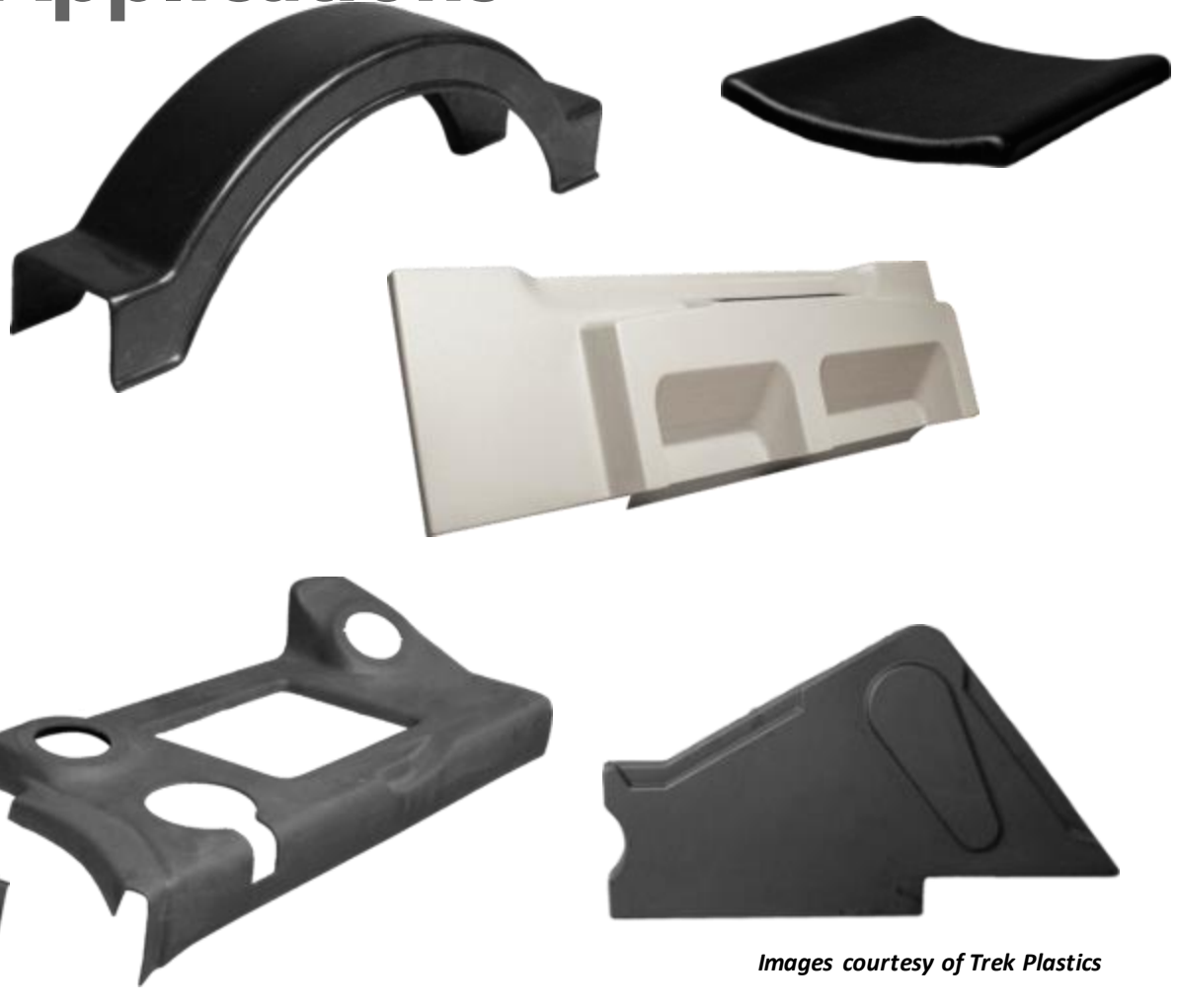
*Images courtesy of Trek Plastics*

- Anti-graffiti materials
- Bumpers
- Fire-rated materials
- HVAC ducting systems
- Seat backs/pans
- Wall claddings
- Window surrounds
- Thermoformed machine housing & parts



# ABS - Endless Applications

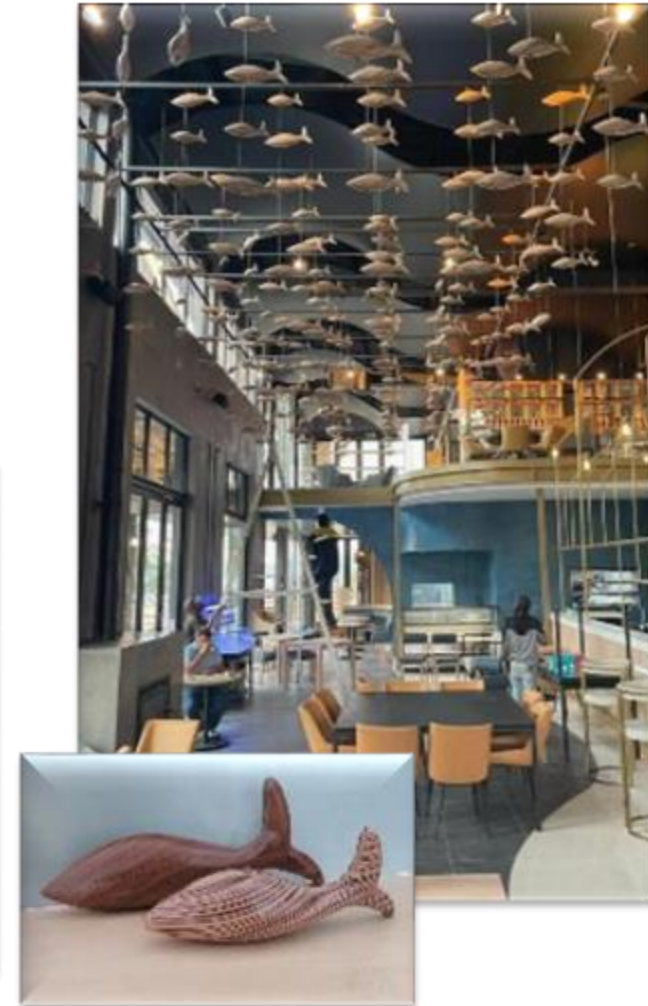
- Dashboards
- Door inners
- Exterior body panels
- Fenders
- Fender liners
- Floor liners
- Roof modules



*Images courtesy of Trek Plastics*



# ABS - Endless Applications



Images courtesy of The Plastics Workshop



# ABS - Locally Produced Variants

Grade	Code	Density	Thickness (mm)							Sheet size*		Colour*	MOQ
			0.9	1	1.5	2	3	4	5	2500 x 1250	2000 x 1000		
Virgin	X6100	1.1	●	●	●	●	●	●	●	●	●	White & Black & Colour	
Capped / PMMA	X6700	1.2	●	●	●	●	●	●	●	●	●	White & colours	3-5 tons
Fire Retardent	X6500	1.2	●	●	●	●	●	●	●	●	●	RAL 9002	3-5 tons
UV stable	X6300	1.1	●	●	●	●	●	●	●	●	●	White & Colours	
Matt Capped	X6200	1.1	●	●	●	●	●	●	●	●	●	Black & White	3-5 tons

\* Sheet size - ABS can go up to a thickness of 8mm, with a max width of 1550

\* Sheet colour - colour matching through our Masterbatch supplier



# HIPS- High Impact Polystyrene



Our locally manufactured HIPS is a **versatile cost-effective material** engineered from tough polystyrene resins. It is often specified for low strength structural applications when impact resistance, machinability, and low cost are required. The surface allows **for good ink adhesion** with the end product looking rich in colour, durable and functional. HIPS is most often used in **applications** of a **temporary** or **disposable nature** and is **fully recyclable**.

HIPS has many different properties that allow for a **wide range of uses** and applications for the thermoplastic and can easily undergo manufacturing processes such **as vacuum forming**, and **easily bends** and **molds** whilst **retaining its durability**. Its properties **do not weaken** once re-molded either; making it very **reliable**.



# HIPS- Benefits

HIPS has **excellent dimensional stability** and is **easy to fabricate** – it can be guillotine cut, die-cut, punched, painted and glued, properties that make it a **popular option for machining**. HIPS can be assembled with mechanical fasteners, solvents, or adhesives. HIPS can be **decorated** using a variety of **printing methods** including offset lithography, screen-printing, and digital printing. It is also used as a **substrate to mount graphics** such as plotter vinyl's/films.

- ❑ High impact strength
- ❑ Fabricates well
- ❑ Superior thermoforming qualities
- ❑ Good dimensional stability
- ❑ Fully recyclable with minimal loss of properties
- ❑ Lightweight
- ❑ Odorless and good for food industry
- ❑ Great insulation properties





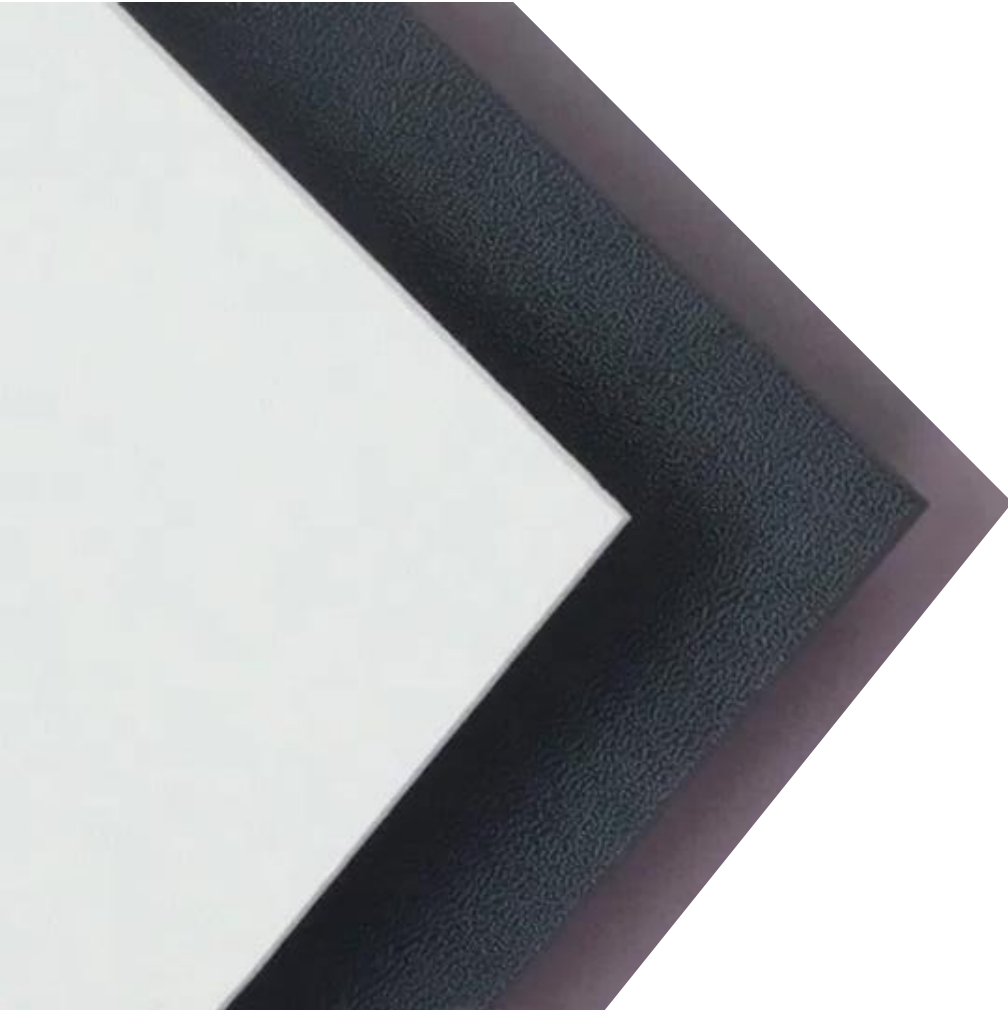
# HIPS

## Technical Info:

- Maximum working temperature continuous: 70 °C
- Heat distortion temperature: 76 °C
- Softening point: 100 °C
- Vacuum forming temperature: 150 °C
- Mould shrinkage: 0,5%
- Specific Gravity: 1.06
- Impact Strength: 10,3 (Charpy unnotched KJ.m<sup>-2</sup>)



# HIPS- Product Variants



- Capped HIPS
- UV Stable HIPS



# HIPS

Generally, polystyrene has a much lower gloss level than ABS, but by running a HIPS base with a crystal GPPS capping, a **high gloss level** can be achieved. HIPS contains many of the properties desired by lithographic, screen and digital printers.

- ❑ Lightweight, good impact resistance
- ❑ High gloss level
- ❑ Can be printed, cut & glued
- ❑ Makes the most amazing, visually pleasing retail & point of sale displays
- ❑ Absorbs little moisture, odorless & retains heat, so ideal for food and catering industries
- ❑ Easy to thermoform
- ❑ Great for applications where high definition is needed (sharp concerns)
- ❑ Endless creative possibilities...



# HIPS- Endless Applications

- ❑ Point of purchase displays
- ❑ Retail displays
- ❑ Printed graphics
- ❑ Thermoformed machine housing & parts
- ❑ Models & prototypes
- ❑ Shelves
- ❑ Kiosks
- ❑ Fixtures
- ❑ Endless decorative purposes...



*Image courtesy of Cold Factor*



# HIPS- Locally Produced Variants

Grade	Code	Density	Thickness (mm)							Sheet size*		Colour*	MOQ
			0.9	1	1.5	2	3	4	5	2500 x 1250	2000 x 1000		
Capped	X5200	1.06	●	●	●	●	●	●	●	●	●	White, Black & Colour (high gloss)	3-5 tons
UV Stable	X5300	1.06	●	●	●	●	●	●	●	●	●	White, Black & Colour	3-5 tons
Printing Industry	X5100	1.06	●	●	●	●	●	●	●	●	●	White Matt/Matt Finish	3-5 tons

\* Sheet size - HIPS can go up to a thickness of 8mm, with a max width of 1550

\* Sheet colour - colour matching through our Masterbatch supplier



# ABS & HIPS

