POLYVANTIS

PRODUCT DATASHEET

GEPAX™ 9020S SHEET

DESCRIPTION

GEPAX™ 9020S sheet is a series of co-extruded opaque polycarbonate sheet, consisting of a colored cap-layer and a black core. The GEPAX 9020S sheet series offers, in addition to its excellent mechanical and thermal properties: high impact performance, excellent formability and improved chemical resistance.

TYPICAL PROPERTY VALUES*

PROPERTY	TEST METHOD	UNITS	VALUE
PHYSICAL			
Density	ISO 1183	g/cm³	1.20
Water absorption, 50% RH, 23 °C	ISO 62	%	0.15
Water absorption, saturation, 23°C	ISO 62	%	0.35
MECHANICAL			
Tensile strength, yield	ISO 527	MPa	60
Tensile strength, break	ISO 527	MPa	60
Tensile modulus	ISO 527	MPa	2200
Tensile elongation, at yield	ISO 527	%	6
Tensile elongation, at break	ISO 527	%	100
Taber Abrasion, CS 17, 1000g, 1000 cycles	ASTM D1044	Mg	50
IMPACT			
Charpy impact, unnotched 23°C, 3.0 mm	ISO 179/1eA	kJ/m²	NB
Charpy impact, notched 23°C, 3.0 mm	ISO 179/1U	kJ/m²	65
Izod impact, unnotched 23°C, 3.0 mm	ISO 180/1U	kJ/m²	NB
Izod impact, notched 23°C, 3.0 mm	ISO 180/1A	kJ/m²	60
Multiaxial impact, MAI, +23 °C, puncture energy	ISO 6603	J	130
Multiaxial impact, MAI, 0 °C, puncture energy	ISO 6603	J	120
Multiaxial impact, MAI, -30 °C, puncture energy	ISO 6603	J	115
THERMAL			
Vicat softening temperature, B/120	ISO 306	°C	145
HDT, 1.80.45 MPa	ISO 75-Ae	°C	136
Coefficient of linear thermal expansion, 23-55°C	ISO 11359-2	-	$7x10^{-5}$
Ball pressure test 125 ±2°C	IEC 60695-10-2	-	Pass
FLAMMABILITY			
Oxygen Index	ISO 4589	%	25
Vertical burn, 60 s, FAR 25.8539(a)	In house testing	-	Pass (3-5mm)

*These are typical properties and are not intended for specification purposes. If minimum certifiable properties are required, please contact your local POLYVANTIS representative or the POLYVANTIS Quality Services Department.

PROCESSING

GEPAX™ 9020S sheet is an excellent candidate for thermoforming. It offers color consistency at deep draw ratios (DR=2; DE < 2) and it can be formed into complex shapes using standard thermoforming equipment. Sandwich type heating systems give the best results. GEPAX™ 9020 sheet has a forming temperature range of 190 - 210°C. When forming, a draft angle of at least 3° should be taken into account. The post mold shrinkage is 0.6 - 0.8%.

PRE-DRYING

It is important to ensure that GEPAX 9020S sheet is kept free of moisture prior to thermoforming. A hot air circulating oven set 120°C is recommended. Pre-drying times vary from 4-24 hours, depending on sheet thickness.

ASSEMBLING

Parts made from GEPAX 9020S sheet can be assembled with plastics, metals, rubber and other materials using many types of adhesive bonding, welding and mechanical fastening techniques. Further information and advice are available on request.

PAINTING

For either functional or decorative reasons it may be necessary to apply finish to GEPAX 9020S sheets or vacuum formed parts. The product is ideally suited for use with a wide variety of modern decoration techniques. A list of approved paint systems and suppliers is available upon request.

CHEMICAL RESISTANCE

GEPAX 9020S sheet has sufficient resistance to most mineral oils, greases, aliphatic hydrocarbons and acids under low or moderate stress levels. In applications where the GEPAX 9020S sheet will come into contact with aggressive chemicals, specific (application related) testing is always advised. Effective painting systems can improve chemical resistance.

SAFETY

The processing guidance given in this documentation is given in good faith and the trust that in all cases you wear the correct Personal Protective Equipment (PPE), e.g. helmet, proper gloves, safety goggles etc. to safely fabricate, e.g. (but not limited to) sawing, cutting, forming our sheets and films. In all cases you should follow local and national regulations around the wear of PPE's prescribed or mandatory to perform these tasks in a safely manor.

PRODUCT AVAILABILITY

Product code:	GEPAX™ 9020S Sheet
Standard width:	2050mm
Standard gauge:	3.75-4.5mm
Textures:	Sandblasted
Colors:	GY8C056

Other colors/sizes are available by special request.

POLYVANTIS

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LEXAN™ POLYCARBONATE FILM & SHEET Tough, Virtually Unbreakable

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