BC-ONGROPACK

Product Catalogue of PVC sheets

BC ONGROPACK
BorsodChem RT.

BC-Ongropack Ltd. is a PVC sheet & film manufacturer located in the North-Eastern part of Hungary. The company was established in 1994, as a daughter company of Borsodchem Rt. one of the largest PVC resin producers in Europe.
BC-Ongropack offers a wide range of solid and foamed products for many applications in industry, construction, advertising, sign-making and D.I.Y. More than 85% of our products are exported mainly to the EU countries but a large development has also been achieved in Central and Eastern Europe.

SERVICE

BC-Ongropack utilizes the 20 years' manufacturing experience to provide a high level of customer support. Our sales managers and representatives, backed up by the technical support can provide quick answers to any inquiry. The registered and accredited laboratory of Borsodchem has the facilities to test materials for compatibility with our products and developing or updating the existing materials for new applications.

QUALITY

BC-Ongropack received ISO 9002 accreditation in 1995 and ISO 14001 accreditation in 2000 recognizing its long term commitment to the highest international quality and environmental codes and standards. Heightening product integrity, colour consistency, long term retention of physical properties our sheets meet the specific product performance requirements for the applications they were designed for.

PRODUCTS

ONGROFOAM-AH, -AX	standard free expanded PVC sheet for sign-making, advertising, constructions, etc.
ONGROFOAM-AY	ultra light free expanded PVC sheet for sign - making
ONGRODUR-AT	solid clear PVC sheet for sign-making, advertising, glazing and wherever the clarity is important
ONGRODUR-AR	solid opaque PVC sheet for advertising and sign-making
ONGRODUR-I	a wide range of solid PVC products for many industrial applications i.e. fabricating, thermoforming, etc.
ONGRODUR-BD	solid PVC sheet with silky matt surface, especially designed for thermoforming of door skins
ONGRODUR-BSL	solid PVC sheet developed especially for manufacturing insulation boards (sandwich panels)
ONGRODUR-BST	same as BSL but food grade
ONGRODUR-IP	plasticized PVC sheet for different applications

ONGROFOAM

ONGROFOAM free expanded and ONGRODUR-AT, -AR sheets are ideal for indoor and outdoor use (coloured foams on request, only) in advertising, sign-making, construction, etc.

Foamed sheets

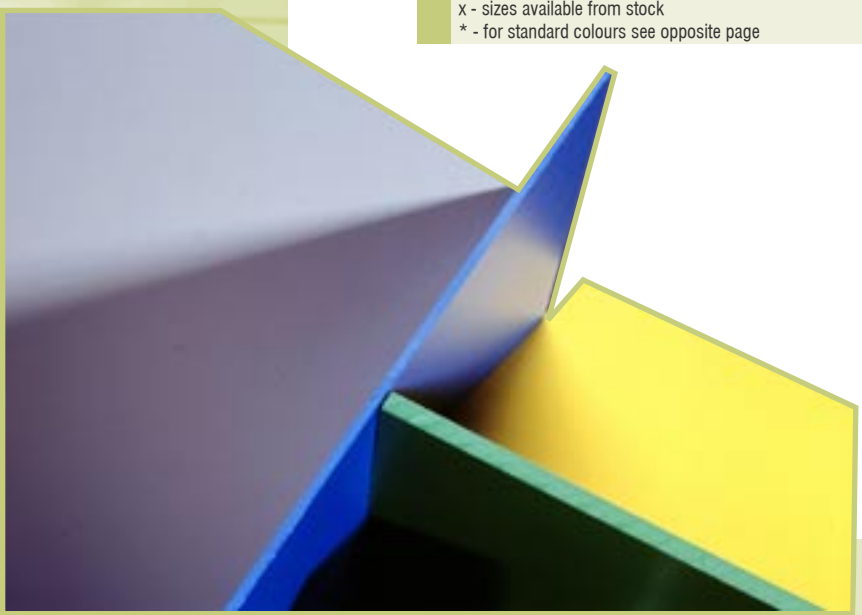
ONGROFOAM sheets feature light weight, durable and versatile surface, can easily be printed, painted, engraved or milled according to the customer's requirements. Sound- and thermal conductivity of ONGROFOAM is low, therefore their sound and heat isolation properties are good. ONGROFOAM sheets are self-extinguishing and comply with the most demanding international fire resistance standards. ONGROFOAM can be easily and economically worked with any standard tools used in metal and wood industries. Sheets are especially easy to handle, thanks to their exceptionally light weight.

Available dimensions of ONGROFOAM

Size (mm)	Thickness	Sheets/packet	white			coloured*
			AHTU	AXTU	AYTU	AHTN
1220x2440	2	150	o	n/a	o	o
	3	100	x	n/a	o	o
	4	80	o	n/a	o	o
	5	60	x	n/a	o	o
	6	50	o	n/a	o	o
	8	40	n/a	o	o	o
	10	30	n/a	x	n/a	o
1560x3050	2	150	x	n/a	x	o
	3	100	x	n/a	x	x
	4	80	x	n/a	x	o
	5	60	x	n/a	x	o
	6	50	x	n/a	x	x
	8	40	n/a	x	n/a	o
	10	30	n/a	x	n/a	o
1400x3050	13	30	n/a	o	n/a	n/a
	15	25	n/a	o	n/a	n/a
	19	25	n/a	x	n/a	n/a
2020x3050	2	100	x	n/a	x	o
	3	80	x	n/a	x	o
	4	70	x	n/a	x	o
	5	60	x	n/a	x	o
	6	50	x	n/a	x	o
	8	40	n/a	x	n/a	o
2010x3050	10	30	n/a	x	n/a	o

o - standard sizes available for order only
x - sizes available from stock
* - for standard colours see opposite page

Note: other sizes and non standard colours are available on request



Specifications/Technical parameters of ONGROFOAM

Parameters	Unit	Types		
		AHTU/AHTN	AXTU	AYTU
Width	mm	1000-2020		
Tolerance on width	mm	1000mm +2,5; -1,0		
		1220mm +2,5; -1,0		
		1560mm +3,0; -1,0		
		2020mm +3,0; -1,0		
Length	mm	2000-3050		
Tolerance on length	mm	2000mm +5; -1		
		2440mm +5; -1		
		3050mm +6; -1		
Thickness (S)	mm	1-7	8-19	1-7
Tolerance on thickness	mm	S±(0,1+0,05S)	S<15mm S±(0,1+0,05S)	S±(0,1+0,05S)
			S≥15mm S±(0,1+0,03S)	
Deviation from the right angle	mm	max.3mm/1000mm		

Typical applications of ONGROFOAM:

Advertising - signs, exhibition boards, displays, etc.
Industry - fabrications, control cabinets and boards, etc.
Construction - wall claddings, sandwich panels, interior decorations, etc.

Processing advices of ONGROFOAM:

Fabricating
- sawing
- drilling
- milling

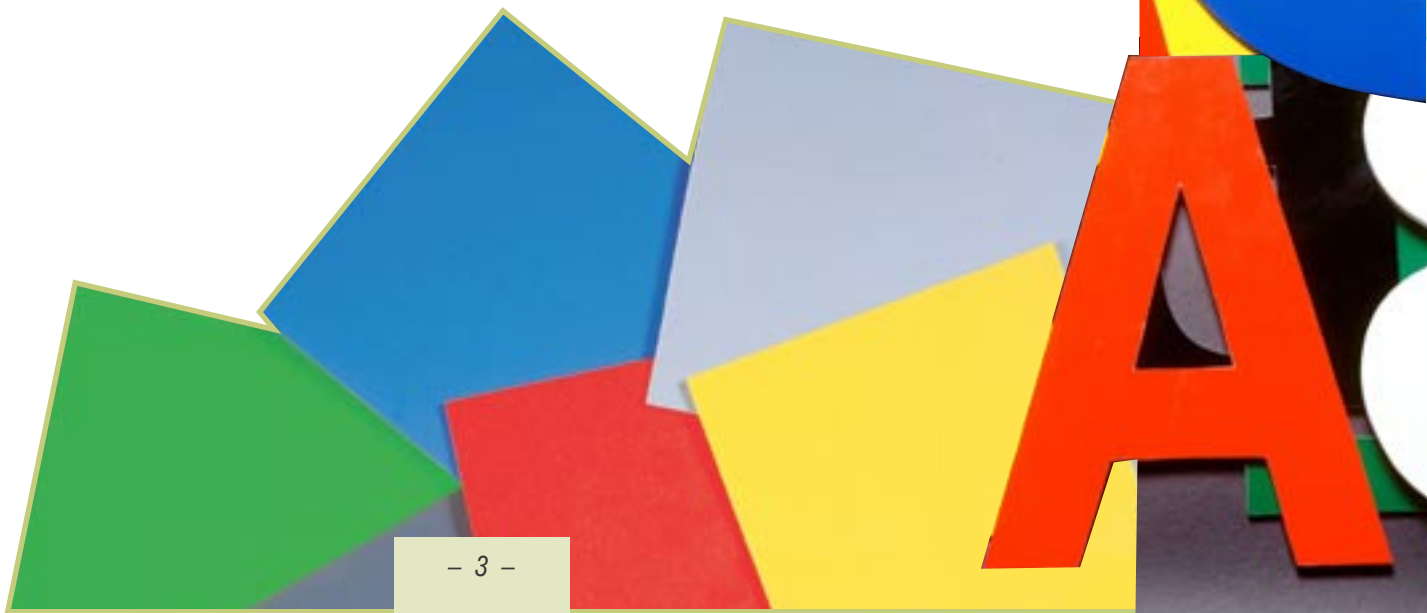
Thermal processing
- bending
- welding
- thermoforming

Others
- screen printing
- digital printing
- vinyl labelling
- laminating
- painting

Standard colours of ONGROFOAM - AHTN sheets

colours	yellow 104	yellow 105	red 302	blue 503	blue 504	green 602	grey 704	black 952
1560x3050mmx3	X	X	X	X	X	X	X	X
1560x3050mmx6	X	X	X	X	X	X	X	X

Other colours are available upon request, subject to quantity.



ONGRODUR-A

transparent and solid sheets

ONGRODUR-AT sheets are a new improved line of quality of our products. These sheets have the clarity on a par with that of polycarbonate and acrylic. They are impervious to corrosive environments, formable in addition to hot or cold bending. They are ideal for glazing, advertising, like Point of Sale displays, Poster glazing, screen printing and painting etc.

ONGRODUR-AR is an opaque solid sheet, especially developed for the same application which our foamed sheets had been designed for. Its high durability and gloss surface make this product applicable in the sign-making industry, advertising, etc. Both ONGRODUR-AT and ONGRODUR-AR sheets are self extinguishing and comply with the most demanding international fire resistance standards defined in the field of plastics.

Available dimensions of ONGRODUR transparent and solid sheets

o - standard sizes available for order, only
x - sizes available from stock

Thickness (mm)	Weight (kg/m²)		1000x2000				1220x2440				1500x3000			
			transparent		white		transparent		white		transparent		white	
	AT types	AR types	ATTN	ATTU	ARTN	ARTU	ATTN	ATTU	ARTN	ARTU	ATTN	ATTU	ARTN	ARTU
1	1.36	1.40	o	o	o	o	o	o	o	o	x	o	o	o
1.5	2.04	2.10	o	o	o	o	o	o	o	o	x	o	o	o
2	2.72	2.80	o	o	o	o	o	o	o	o	x	o	o	o
3	4.08	4.20	o	o	o	o	o	o	o	o	x	o	o	o
4	5.44	5.60	o	o	o	o	o	o	o	o	o	o	o	o
5	6.80	7.00	o	o	o	o	o	o	o	o	o	o	o	o
6	8.16	8.40	o	o	o	o	o	o	o	o	o	o	o	o

Specifications/Technical parameters of ONGRODUR sheets

Parameters	Unit	Types					
		ATTN/ATTU			ARTN/ARTU		
Width	mm	1000	1220	1500	1000	1220	1500
Tolerance on width	mm	+2.0; -1.0	+2.5; -1.0	+3.0; -1.0	+2.0; -1.0	+2.5; -1.0	+3.0; -1.0
Length	mm	1000-3000			1000-3000		
Tolerance on length	mm	1000-2000mm +5.0; -1.0 2001-3000mm +6.0; -1.0			1000-2000mm +5.0; -1.0 2001-3000mm +6.0; -1.0		
Thickness (S)	mm	1.0-10.0			1.0-20.0		
Tolerance on thickness	mm	S≤4mm S±(0,1+0,05S)			S≤4mm S±(0,1+0,05S)		
		S>4mm S±(0,08+0,03S)			S>4mm S±(0,08+0,03S)		
Deviation from the right angle	mm	max. 3 mm/1000mm			max. 3 mm/1000mm		
Linear dimensional change	%	S<1.5 mm 140°C/60 min.			S<1.5 mm 140°C/60 min.		
		length	min. -10.0		length	min. -10.0	
		width	max.+2.0		width	max.+2.0	
		S=1.5-3.0 mm 140°C/60 min.			S=1.5-3.0 mm 140°C/60 min.		
		length	min. -7.0		length	min. -7.0	
		width	max.+2.0		width	max.+2.0	
		S=3.0-10.0 mm 140°C/75 min.			S=3.0-10.0 mm 140°C/75 min.		
		length	min. -5.0		length	min. -5.0	
		width	max.+2.0		width	max.+2.0	
		S>10.0 mm 140°C/90 min.			S>10.0 mm 140°C/90 min.		
		length	n/a		length	min. -2.0	
		width	n/a		width	max.+2.0	
Transparency	%	min. 89/mm			n/a		

Typical applications of ONGRODUR-AT & -AR transparent and solid sheets.

Advertising - signs, exhibition boards, points of sale displays, photo glazing, etc.
Industry - fabricated items & protections in chemically corrosive environments, etc.
Construction - glazing, wall claddings, etc.

Processing advices of ONGRODUR-AT & -AR transparent and solid sheets.

Fabricating
- sawing
- drilling
- milling

Thermal processing
- bending
- welding
- bonding *(pvc based adhesives, only)*
- thermoforming

Others
- screen printing
- digital printing
- vinyl labelling
- laminating
- painting

ONGRODUR-B

ONGRODUR-B type is a recently launched product range, especially developed for construction. BDTU sheets are high impact which ensure the good formability. They have very fine surface as well which is required by door manufacturers. BSLU products are recommended for sandwich panel applications with different surface finish. As a ready made product, sandwich panel is ideal for insulation. However it is widely used by the window and door manufacturers, too. Both BDTU and BSLU types are self extinguishing and comply with the most demanding international fire resistance standards defined in the field of plastics. ONGRODUR-B is only available in white. However other colours can be matched on request.

Available dimensions of ONGRODUR building industrial sheets

Application			Door skin panels	Sandwich panels				Food hall cladding
Thickness (mm)	Weight (kg/m²)		BDTU-24	BSLU-21		BSLU-23		BSTU-23
	BDTU	BSLU/BSTU	950/975/1000x2175	1500x3000	1500x2000	1500x2500	1500x3000	1500x3000
1	1.40	1.42	o	o	o	o	o	o
1.5	2.10	2.13	x**	x	o	o	o	o
2	2.80	2.84	o	o	o	o	o	o
3	4.20	4.26	o	o	o	o	o	o
4	5.60	5.68	o	o	o	o	o	o
4.5	6.30	6.39	o	o	o	o	o	o

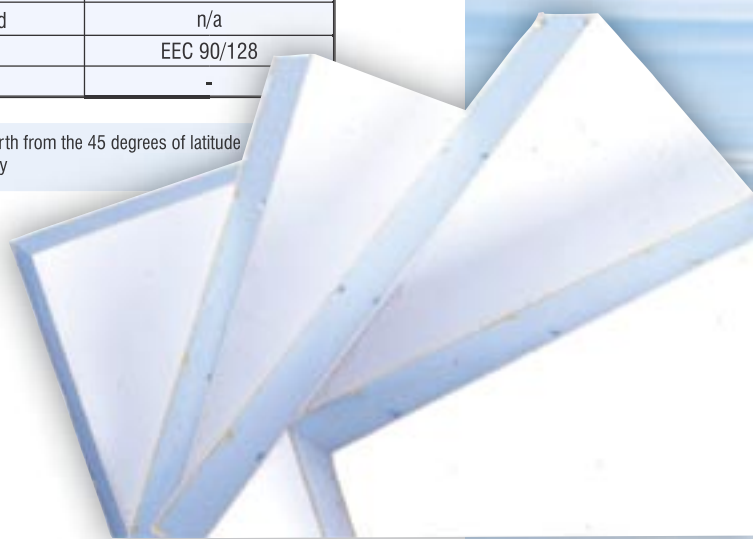
o - standard sizes available for order, only
x - sizes available from stock
** - 975mm only

Specifications/Technical parameters of ONGRODUR sheets for building industry

Parameters	Unit	Types						
		BSLU-21/BSLU-23/BSLU-24			BDTU-24		BSTU-23	
Width*	mm	1000	1220	1500	950, 975, 1000		1500	
Tolerance on width	mm	+2.0; -1.0	+2.5; -1.0	+3.0; -1.0	+2.0; -1.0		+3.0; -1.0	
Length*	mm	1000-3000			2175		3000	
Tolerance on length	mm	1000-2000mm +5.0; -1.0 2001-3000mm +6.0; -1.0			+5.0; -1.0		+6.0; -1.0	
Thickness (S)	mm	1.0-10.0			1.0-4.5		1.0-4.5	
Tolerance on thickness	mm	S≤4mm S±(0,1+0,05S)			S≤4mm S±(0,1+0,05S)		S≤4mm S±(0,1+0,05S)	
		S>4mm S±(0,08+0,03S)			S>4mm S±(0,08+0,03S)		S>4mm S±(0,08+0,03S)	
Deviation from the right angle	mm	max. 3 mm/1000mm			max. 3 mm/1000mm		max. 3 mm/1000mm	
Linear dimensional change	%	S<1.5 mm 140°C/60 min.			S<1.5 mm 140°C/60 min.		S<1.5 mm 140°C/60 min.	
		length	min.-10.0		length	min.-10.0	length	min.-10.0
		width	max.+2.0		width	max.+2.0	width	max.+2.0
		S=1.5-3.0 mm 140°C/60 min.			S=1.5-3.0 mm 140°C/60 min.		S=1.5-3.0 mm 140°C/60 min.	
		length	min.-7.0		length	min.-7.0	length	min.-7.0
		width	max.+2.0		width	max.+2.0	width	max.+2.0
		S=3.0-10.0 mm 140°C/75 min.			S=3.0-10.0 mm 140°C/75 min.		S=3.0-10.0 mm 140°C/75 min.	
		length	min.-5.0		length	min.-5.0	length	min.-5.0
		width	max.+2.0		width	max.+2.0	width	max.+2.0
		S>10.0 mm 140°C/90 min.			S>10.0 mm 140°C/90 min.		S>10.0 mm 140°C/90 min.	
		length	min.-2.0		length	n/a	length	n/a
		width	max.+2.0		width	n/a	width	n/a
Colour consistency**		5 years according to the third grade of grey scale of DIN 54001 standard					n/a	
Deviation of colour white		ΔE≤1.5 according to the DIN 6174 standard					n/a	
Food grade		n/a					EEC 90/128	
Surface		normal; silky; matt			matt		-	

* - Other sizes are available on request

** - this colour consistency is valid to the North from the 45 degrees of latitude on a max.altitude of 800m in Europe, only



ONGRODUR-I

ONGRODUR-I solid industrial sheets have a wide variety of applications. Material can be thermoformed and fabricated. It has excellent electrical and thermal insulation properties. All types are resistant to chemical and corrosive environments (for more information please see p.9). IRLU types are weather resistant which qualify them for external applications. Our products are self extinguishing and comply with most of the international fire resistance standards defined for plastics. ONGRODUR-I is available in the most popular industrial colours (see the references below). However, other colours can be matched upon request.

Available dimensions of ONGRODUR industrial sheets

x - standard sizes available from stock in grey RAL 7011

o - standard sizes available for order in grey RAL 7011, 7035, 7037, brown RAL 8023 and white
Note: other sizes and colours on request

Thickness (mm)	Weight (kg/m²)	1000x2000 mm					1220x2440 mm					1500x3000 mm				
		IRLN-11	IRLU-11	IRLN-21	IRLU-21	IRTU-21	IRLN-11	IRLU-11	IRLN-21	IRLU-21	IRTU-21	IRLN-11	IRLU-11	IRLN-21	IRLU-21	IRTU-21
1.0	1.43	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
1.5	2.15	o	o	o	o	o	x	o	o	o	o	o	o	o	o	o
2.0	2.86	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
3.0	4.29	o	o	o	o	o	x	o	o	o	o	o	o	o	o	o
4.0	5.72	o	o	o	o	o	x	o	o	o	o	o	o	o	o	o
4.5	6.44	o	o	o	o	o	x	o	o	o	o	o	o	o	o	o
5.0	4.15	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
6.0	8.58	o	o	o	o	o	x	o	o	o	o	o	o	o	o	o
8.0	11.44	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
9.0	12.87	o	o	o	o	o	x	o	o	o	o	o	o	o	o	o
10.0	14.30	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
12.0	17.16	o	o	o	o	o	x	o	o	o	o	n/a	n/a	n/a	n/a	n/a
15.0	21.45	o	o	o	o	o	o	o	o	o	o	n/a	n/a	n/a	n/a	n/a
18.0	25.74	o	o	o	o	o	o	o	o	o	o	n/a	n/a	n/a	n/a	n/a
20.0	28.60	o	o	o	o	o	x	o	o	o	o	n/a	n/a	n/a	n/a	n/a

Specifications/Technical parameters of ONGRODUR industrial sheets

Parameters	Unit	Types					
		IRLN-11	IRLU-11	IRLN-21	IRLU-21	IRLU-23	IRTU-21
Characteristics	n/a	normal surf.	normal surf.	normal surf.	normal surf.	normal surf.	mat surf.
		lead stabilized	lead stabilized	lead stabilized	lead stabilized	lead stabilized	tin stabilized
		normal impact	normal impact	high impact	high impact	high impact	high impact
		internal use	external use	internal use	external use	external use	external use
Width*	mm	**1-10mm 1000-1500mm; 11-20mm 1000-1220mm**					
Tolerance on width	mm	1000mm +2,0; -1.0 1220mm +2.0; -1.0 1500mm +3.0; -1.0					
Length*	mm	**1000-3000**					
Tolerance on length	mm	1000-2000mm +5.0; -1.0 2001-3000mm +6.0; -1.0					
Thickness (S)	mm	1.0-20.0					
Tolerance on thickness	mm	S≤4mm S±(0,1+0,05S)					
		S>4mm S±(0,08+0,03S)					
Deviation from the right angle	mm	max. 3 mm/1000mm					
Linear dimensional change	%	S<1.5 mm 140°C/60 min.					
		length	min. -10.0				
		width	max. +2.0				
		S=1.5-3.0 mm 140°C/60 min.					
		length	min. -7.0				
		width	max.+2.0				
		S=3.0-10.0 mm 140°C/75 min.					
		length	min. -5.0				
		width	max.+2.0				
		S>10.0mm 140°C/90 min.					
		length	min. -2.0				
		width	max.+2.0				

Standard colours of ONGRODUR-I sheets

white	grey RAL 7011	grey RAL 7035	grey RAL 7037	brown RAL 8023
X	X	X	X	X

Other colours are available on request; min. quantity is 3-5 tonnes

Typical applications of ONGRODUR-I industrial sheets.

- *drainage*
- *ventilation shafts*
- *refrigerators*
- *galvanization*
- *engineering*
- *cladding*
- *chemical processing*
- *construction*

Processing advices of ONGRODUR-I industrial sheets.

Fabricating
- shearing or cutting (up to 6mm)
- sawing (1-20mm)

Bending
- heat-bending at 120-140°C (248-285 °F)

Welding
- hot air
- butt-welding
- ultrasonic
- high frequency

Laminating
Painting

Thermoforming (IRLN–2, IRLU–2 types, only)

- 1-8mm (l/d=0,5)
- pre stretching is advisable
- applicable temperature is 120-140°C (248-285°F)

ONGRODUR-IP - plasticized sheets

ONGRODUR-IP. Two types are available: general purpose and freezer grade which is applicable at the temperature of - 40 °C (- 40°F). Main application is industrial swing door manufacturing. This product is only available in clear. Material has also got good welding properties.

Available dimensions of ONGRODUR plasticized sheets

Thickness (mm)	Type		IPTU-11000			IPTU-11006
	Weight (kg/m²)	Length (m)	800mm	1000mm	1560mm	1560mm
2	2.5/2.4	20	o	o	o	o
3	3.75/3.6	20	o	o	x	o
4	5.0/4.8	20	o	o	o	o
5	6.25/6.0	10	o	o	x	o

o - standard sizes available for order, only x - sizes available from stock

Specifications/Technical parameters of ONGRODUR plasticized sheets

Parameters	Unit	Types			
		IPTU -11000		IPTU-11600 (freezer grade)	
Width	mm	800; 1000; 1560		1560	
Tolerance on width	mm	+3.0; -1.0		+3.0; -1.0	
Length	mm	on request		on request	
Tolerance on length	%	+3.0; -0.05		+3.0; -0.05	
Thickness (S)	mm	2-5		2-5	
Tolerance on thickness	mm	S=2.0 -2.9 mm S±0.1		S=2.0 -2.9 mm S±0,1	
		S=3.0 -5.0 mm S±(0.1+0.05S)		S=3.0 -5.0 mm S±(0.1+0.05S)	
Linear dimensional change at 100°C/60 min.	%	length	max.-5.0	length	max.-5.0
		width	max.+2.0	width	max.+2.0
Transparency	%/mm	min. 95		min. 90	
Hardness	Shore A	75±5		64±5	

			Foamed sheets				Solid sheets						Plasticized sheet	
Properties	**Test method**	**Unit**	**AHTU-1**	**AXTU-1**	**AYTU-1**	**AHTN-1**	**ATTU ATTN**	**ARTU ARTN**	**IRLU-1 IRLN-1**	**IRLU-2 IRLN-2**	**BDTU-2**	**BSLU-2 BSTU-2**	**IPTU-11000**	**IPTU-11006**
Mechanical properties														
Density	MSZ ISO 1183	g/cm^3	S<3:0,8 S=3-6:0,7	S=8-19: 0,55	S<3:0,65 S=3-6: 0,56	0,8	1,36	1,40	1,43	1,43	1,40	1,42	1,18	1,21
Tensile strength	MSZ EN ISO 527-1,2,3	MPa	>10	>10	>10	>10	>45	>45	>45	>45	>45	>45	>13	>8
Elongation at break	MSZ EN ISO 527-1,2,3	%	>10	>10	>10	>10	-	-	>15	>15	>20	>10	>250	>300
Modulus of elasticity	MSZ EN ISO 527-1,2,3	MPa	>1300	-	-	>1300	-	-	>3500	>3500	-	>3000	-	-
Impact strength	MSZ EN ISO 179-2	-	-	-	-	-		-	-	-	-	no break	-	-
Impact strength at -20°C	MSZ EN ISO 179-2	-	-	-	-	-	no break	-	-	no break	no break	no break	-	-
Shore A	MSZ EN ISO 868	-	-	-	-	-	-	-	-	-	-	-	63	73
Shore D	MSZ EN ISO 868	-	-	-	-	-	81	80	81	78	75	80	-	-
Thermal properties														
Vicat B	MSZ EN ISO 306	°C	-	-	-	-	67	73	80	78	74	79	-	-
		°F	-	-	-	-	152	163	176	172	165	174	-	-
Linear thermal expansion coefficient	DIN 53752	K^{-1}x10^{-4}	0,75	0,75	0,75	0,75	0,7	0,7	0,7	0,7	0,7	0,7	-	-
Thermal conductivity	DIN 52612	W/mK	0,14	0,14	0,14	0,14	0,2	0,2	0,2	0,2	0,2	0,2	-	-
Cold brittle at -40°C	-	-	-	-	-	-	-	-	-	-	-	-	-	no break
Electronical properties														
Dielectric strength	MSZ EN 60243-1	kV/mm	-	-	-	-	20	20	31	31	23	21	-	-
Surface resistivity	DIN 53482	Ohm	-	-	-	-	10^{13}	10^{13}	10^{13}	10^{13}	10^{13}	10^{13}	-	-
General properties														
Fire rating	DIN 4102 (D)	-	B1	B2	B2	B1*	B1	B1	B1	B1	B1	B1	-	-
	CSE RF 3/77 (I)	-	Class1	Class2	Class2	Class1*	Class1	Class1	Class1	Class1	Class1	Class1	-	-
	NFP 92-501 (F)	-	M1	M2	M2	M1*	M1	M1	M1	M1	M1	M1	-	-
	BS 476 Part7 (GB)	-	Class1	Class2	Class2	Class1*	Class1	Class1	Class1	Class1	Class1	Class1	-	-
	UL 94 (US)	-	V0	-	-	V0*	V0	V0	V0	V0	V0	V0	-	-
Water absorption	DIN 53495	%	-	-	-	-	0,2	0,2	0,2	0,2	0,2	0,2	-	-
Working temperature range	-	°C	0-60	0-60	0-60	0-60	0-60	0-60	0-50	-10+60	-20+60	-20+60	0-60	-40+50
	-	°F	32-140	32-140	32-140	32-140	32-140	32-140	32-122	14-140	-4-140	-4-140	32-140	-40-122

Note: The data shown in this table has been determined in our laboratories and should be considered as a useful reference only; they do not undertake as an engagement for use in different application. * 1-6mm

Chemical resistance of sheets manufactured by BC-ONGROPACK

Chemical	Concentration	Tempera-ture °C	PVC A	PVC B	PVC I
Acetaldehyde	technically pure	20	-	-	-
Acetic acid	technically pure, glacial	20	0	0	0
Acetone	technically pure	20	-	-	-
Acrylic acid methyl ester	technically pure	20	-	-	-
Adipic acid	saturated aqueous	20	+	+	+
Allyl alcohol	96%	20	0	0	0
Ammonia	gaseous, technically pure	20	+	+	+
		40	+	+	+
Ammonium acetate	all, aqueous	20	+	+	+
Ammonium chloride	10%, aqueous	20	+	+	+
Ammonium hydroxide	aqueous, cold saturated	20	+	+	+
Ammonium phosphate	all, aqueous	20	+	+	+
Amyl alcohol	technically pure	20	+	+	+
Aniline	technically pure	20	-	-	-
Aqua regia		20	+	+	+
		40	0	0	0
Benzene	technically pure	20	-	-	-
Benzine	free of lead and aromatic compounds	20	+	+	+
		40	+	+	+
		60	+	+	+
Benzyl alcohol	technically pure	20	0	0	0
Borax	all, aqueous	20	+	+	+
Boric acid	all, aqueous	20	+	+	+
Bromine, liquid	technically pure	20	-	-	-
Butadiene	technically pure	20	+	+	+
Butane	technically pure	20	+	+	+
Butanol	technically pure	20	+	+	+
Butyl acetate	technically pure	20	-	-	-
Butylene glycol	technically pure	20	+	+	+
Calcium hydroxide	aqueous, saturated	20	+	+	+
Calcium hypochlorite	cold saturated, aqueous	20	+	+	+
Carbon dioxide (carbonic acid)	technically pure anhydrous	20	+	+	+
Carbon tetrachloride	technically pure	20	-	-	-
Caustiic soda solution	50% aqueous	20	+	+	+
		40	+	+	+
		60	+	+	+
Chlorethanol	technically pure	20	-	-	-
Chloric acid	10% aqueous	20	+	+	+
	20% aqueous	20	+	+	+
		40	+	+	+
		60	0	0	0
Chlorine	moist, 97%, gaseous	20	-	-	-
Chloro ethanol	technically pure	20			
Chloroform	technically pure	20	-	-	-
Chromic acid	up to 50%, aqueous	20	0	0	0
Citric acid	10%, aqueous	20	+	+	+
Cyclohexanone	technically pure	20	-	-	-
Dibutyl phthalate	technically pure	20	-	-	-
Dichloroacetic acid	technically pure	20	+	+	+
Dichlorobenzene	technically pure	20	-	-	-
Dichloroethylene	technically pure	20	-	-	-
Diesel oil	technically pure	20	+	+	+
Diethylamine	technically pure	20	0	0	0
Diglycolic acid	30%, aqueous	20	+	+	+
Di-isobutyl ketone	technically pure	20	-	-	-
Dimethylamine	technically pure	20	0	0	0
Dioctyl phthalate	technically pure	20	-	-	-
Dioxane	technically pure	20	-	-	-
Ethyl acetate	technically pure	20	-	-	-
Ethyl alcohol	technically pure, 96%	20	+	+	+

Chemical	Concentration	Tempera-ture °C	PVC A	PVC B	PVC I
Ethyl benzene	technically pure	20	-	-	-
Ethyl chloride	technically pure	20	-	-	-
Ethyl ether	technically pure	20	-	-	-
Ethylene chloride	technically pure	20	-	-	-
Ethylene glycol	technically pure	20	+	+	+
Fluorine	technically pure	20	-	-	-
Fluorosilicic acid	32%, aqueous	20	+	+	+
Formaldehyde	40%, aqueous	20	+	+	+
Formic acid	up to 50%, aqueous	20	+	+	+
Fuel oil		20	+	+	+
		40	0	0	0
Glycerine	technically pure	20	+	+	+
Glycolic acid	37%, aqueous	20	+	+	+
Hexane	technically pure	20	+	+	+
Hydrochloric acid	10%, aqueous	20	+	+	+
		40	+	+	+
		60	0	0	0
	up to 30%, aqueous	20	+	+	+
		40	+	+	+
		60	0	0	0
	36%, aqueous	20	+	+	+
		40	+	+	+
		60	0	0	0
Hydrofluoric acid	up to 40%, aqueous	20	+	+	+
Hydrogen	technically pure	20	+	+	+
Hydrogen peroxide	30%, aqueous	20	+	+	+
		40	+	+	+
		60			
	90%, aqueous	20	+	+	+
Hydrogen sulphide	technically pure	20	+	+	+
Iodine solution		20	-	-	-
Isopropyl alcohol	technically pure	20	+	+	+
Lactic acid	10%, aqueous	20	+	+	+
		40	0	0	0
Lubricating oils		20	+	+	+
Mercury	pure	20	+	+	+
Methane (natural gaz)	technically pure	20	+	+	+
Methanol	all	20	+	+	+
Methyl acetate	technically pure	20	-	-	-
Methyl chloride	technically pure	20	-	-	-
Methyl ethyl ketone	technically pure	20	-	-	-
Naphthalene	technically pure	20	-	-	-
Nitric acid	up to 40%, aqueous	20	+	+	+
		40	+	+	+
		60	0	0	0
	65%, aqueous	20	0	0	0
		40	0	0	0
	100%	20	-	-	-
Nitrobenzene	technically pure	20	-	-	-
Nitrotoluene	technically pure	20	-	-	-
Oleic acid	technically pure	20	+	+	+
Oleum	10% SO_3	20	-	-	-
Olive oil		20	+	+	+
Oxalic acid	cold saturated, acqueous	20	+	+	+
Oxygen	technically pure	20	+	+	+
Ozone	up to 2%, in air	20	+	+	+
Palmitic acid	technically pure	20	+	+	+
Paraffin oil		20	+	+	+
Perchlorethylene (tetrachlorethylene)	technically pure	20	-	-	-

Classification: + Resistant, 0 Conditionally resistant, - Not recommended

Chemical	Concentration	Tempera-ture °C	PVC A	PVC B	PVC I
Perchlorid acid	10%, aqueous	20	+	+	+
		40	+	+	+
		60	0	0	0
Petroleum	technically pure	20	+	+	+
		40			
		60			
Phenol	up to 10%, aqueous	20	+	+	+
		40	0	0	0
Phenylhydrazine	technically pure	20	-	-	-
Phosgene	liquid, technically pure	20	-	-	-
Phosphoric acid	85%, aqueous	20	+	+	+
		40	+	+	+
		60	+	+	+
Phthalic acid	saturated, aqueous	20	+	+	+
Picric acid	1%, aqueous	20	+	+	+
Potassium chlorate	cold saturated, aqueous	20	+	+	+
Potassium chloride	all, aqueous	20	+	+	+
Potassium permanganate	cold saturated, aqueous	20	+	+	+
Potassium phosphates	all, aqueous	20	+	+	+
Propane	technically pure, liquid	20	+	+	+
Propylene glycol	technically pure	20	+	+	+
Pyridine	technically pure	20	-	-	-
Silicone oil		20	+	+	+
		40	0	0	0
Silver salts	cold saturated, aqueous	20	+	+	+
Sodium acetate	all, aqueous	20	+	+	+
Sodium chlorate	all, aqueous	20	+	+	+
Sodium chromate	diluted, aqueous	20	+	+	+
Sodium floride	cold saturated, aqueous	20	+	+	+
Sodium hypochlorite	12.5% active chlorine, aqueous	20	+	+	+
		40	+	+	+
Sodium oxalate	cold saturated, aqueous	20	+	+	+
Sodium phosphate	cold saturated, aqueous	20	+	+	+
Sulphur	technically pure	20	0	0	0
Stearic acid	technically pure	20	+	+	+
Sulphur	technically pure	20	0	0	0
Sulphur dioxide	technically pure, anhydrous	20	+	+	+
Sulphur trioxide		20	-	-	-
Sulphur acid	up to 40%, aqueous	20	+	+	+
		40	+	+	+
		60	0	0	0
	up to 60%, aqueous	20	+	+	+
		40	+	+	+
	up to 80%, aqueous	20	+	+	+
		40	+	+	+
		60	+	+	+
	90%, aqueous	20	+	+	+
	96%, aqueous	20	+	+	+
Tetraethyl lead	technically pure	20	+	+	+
Tetrahydrofurane	technically pure	20	-	-	-
Toluene	technically pure	20	-	-	-
Tributylphosphate	technically pure	20	-	-	-
Trichloroethylene	technically pure	20	-	-	-
Trichloroacetic acid	technically pure	20	0	0	0
Trioctyl phosphate	technically pure	20	-	-	-
Urea	up to 30%, aqueous	20	+	+	+
Vinyl acetate	technically pure	20	-	-	-
Vinyl chloride	technically pure	20	-	-	-
Xilene	technically pure	20	-	-	-

Classification: + Resistant, 0 Conditionally resistant, - Not recommended

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