

MATERIAL OVERVIEW

[murdotec.de](https://www.murdotec.de)



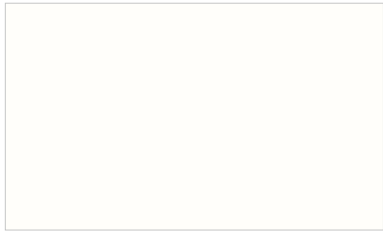
Murdotec® Premium PE



Murdotec® 1000
green



Murdotec® 1000
black AST



Murdotec® 1000
natural

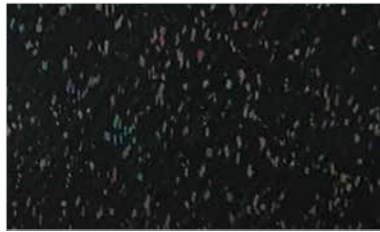
Murdotec® Regenerated PE



Murdotec® 1000 U
green



Murdotec® 1000 U
black AST



Murdotec® 1000 U
black-multicoloured

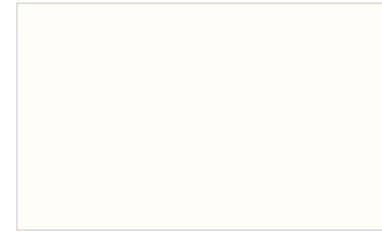
Dialen® Lining PE



Dialen® MR
opal green
RAL 6026



Dialen® MR
black AST
RAL 9017



Dialen® MR
natural
RAL 9016



Murdotec® Specialties



Murdotec® 2000 MC
RAL 5013



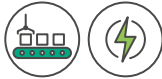
Murdotec® 2000 MD
RAL 5024



Murdotec® 1000 AB
RAL 5015



Murdotec® 2000 MCE
RAL 9017



Murdotec® 2000 G
RAL 6019



Murdotec® 1000 E
RAL 9017



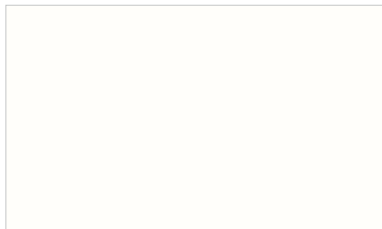
Murdotec® 2000 MCWE
RAL 9017



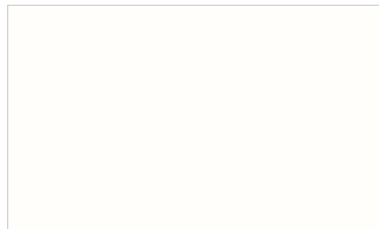
Murdotec® 2000 HS
RAL 3003



Murdotec® 2000 MOS
RAL 7024



Murdotec® 1000
white ESD
RAL 9016



Murdotec® 2000 C
RAL 9016



Sectors – Murdotec® semi-finished products in action



Transport and Conveyor Technology



Bottling and Beverage Technology



Packaging and Food Industry



Agricultural Technology and Agricultural Machinery



Chemicals and Paper Industry



Electrical Industry – ATEX Standard



Bulks goods and Mining Industries



Offshore and Harbour Construction



Sheet sizes

Thickness: 8 – 130 mm



4080 × 2005 mm



4080 × 1005 mm



3060 × 1005 mm
2005 × 1020 mm



2005 × 1335 mm



2005 × 1020 mm

Thickness: 8 – 80 mm



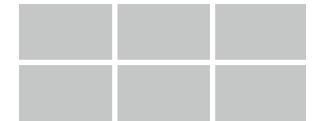
6100 × 2505 mm



6100 × 1250 mm



3060 × 1250 mm



2005 × 1250 mm



2505 × 1010 mm

Thickness tolerance: +0/+0,4 mm
Individual dimensions on demand

Rods

∅ Diameter mm	Turned	Extruded*
10	•	
15	•	
20	•	•
25	•	•
30	•	•
35	•	•
40	•	•
45	•	•
50	•	•
60	•	•
70	•	•
80	•	•
90	•	•
100	•	•
110	•	•
120	•	•
130	•	•
140	•	•
150	•	•
160	•	•
170	•	
180	•	•
190	•	
200	•	•

Our laboratory services

Density Test
according to
DIN EN ISO 1183-1



Charpy Impact Test (Double-sided notch)
according to
DIN EN ISO 179



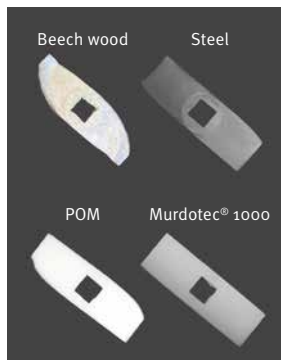
Shore Hardness D
according to
DIN EN ISO 868



Ball Indentation Hardness
according to
DIN EN ISO 2039



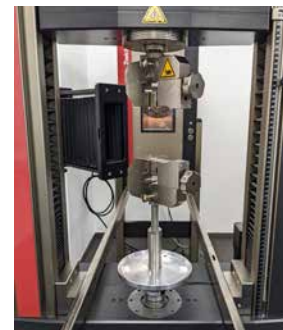
Wear Resistance (Sand-Slurry-Test)
according to
DIN EN ISO 15527 /
DIN EN ISO 11542-2



Electrical Resistance Measurements
according to
DIN EN 61340



Tensile Test
according to
DIN EN ISO 527-2 | for:
· Yield stress
· Breaking elongation
· Coefficient of elasticity



Further equipment

FTIR Spectroscopy

Microscope

Laboratory press

Metal detector

Ultrasonic measurement

Melt flow index

*Murdotec® 1000 natural, green, black, blue

Data sheet

	Standard	Unit	Murdotec® 1000 green	Murdotec® 1000 black AST	Murdotec® 1000 natural	Murdotec® 1000 U green	Murdotec® 1000 U black AST	Murdotec® 1000 U black-multi-coloured	Dialen® MR opal green	Dialen® MR black AST	Dialen® MR natural
Technical properties											
Short mark	ISO 1043-1		UHMW-PE	UHMW-PE	UHMW-PE	UHMW-PE	UHMW-PE	UHMW-PE	UHMW-PE	UHMW-PE	UHMW-PE
Material colors			traffic green	traffic black	natural	green	black	black multicoloured	opal green	traffic black	natural
similar RAL			6024	9017	9016				6026	9017	9016
Average molecular weight	N.N.	g/mol	5×10 ⁶	5×10 ⁶	5×10 ⁶				9×10 ⁶	9×10 ⁶	9×10 ⁶
Sheet group	ISO 15527		1.2	1.2	1.2				1.1	1.1	1.1
Density	ISO 1183-1	g/cm ³	≤ 0.94	≤ 0.94	≤ 0.94	≤ 0.96	≤ 0.96	≤ 0.96	≤ 0.94	≤ 0.94	≤ 0.94
Water absorption - saturation at 23°C		%	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Mechanical properties											
Yield stress	ISO 527-1/-2	MPa	~ 20	~ 20	~ 20	~ 20	~ 20		~ 20	~ 20	~ 20
Breaking elongation	ISO 527-2	%	> 300	> 300	> 300	> 280	> 200		> 250	> 250	> 250
Coefficient of elasticity	ISO 527-1/-2	MPa	> 700	> 700	> 700	> 700	> 700		> 600	> 600	> 600
Double-sided notch impact toughness (Charpy)	ISO 11542-2	kJ/m ²	≥ 170	≥ 170	≥ 170	≥ 80	≥ 80	≥ 50	≥ 170	≥ 170	≥ 170
Shore hardness D	ISO 868		61-65	61-65	61-65	61-65	61-65	61-66	61-64	61-65	61-64
Ball indentation hardness	ISO 2039-1	N/mm ²	> 30	> 30	> 30	> 30	> 30	> 30	> 30	> 30	> 30
Wear resistance (Sand-Slurry-Test)	ISO 15527	%	100	110	100	120	120	160	80	80	80
Average coefficient of friction against steel (0,25 m/s, 0,25 MPa, 24 h)		μ	~ 0.20	~ 0.20	~ 0.20	~ 0.20	~ 0.20	~ 0.20	~ 0.20	~ 0.20	~ 0.20
Average coefficient of friction against POM (0,25 m/s, 0,25 MPa, 24 h)											
Thermal properties											
Heat conductivity at 23 °C	ISO 22007-4	W/(K × m)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Linear thermal coefficient of expansion											
- Average value between 23 and 60 °C	ISO 11359-1/-2	m/(K × m)	20×10 ⁻⁵	20×10 ⁻⁵	20×10 ⁻⁵	20×10 ⁻⁵	20×10 ⁻⁵	20×10 ⁻⁵	20×10 ⁻⁵	20×10 ⁻⁵	20×10 ⁻⁵
Upper service temperature in air											
- short term	N.N.	°C	90	90	90	90	90	90	90	90	90
- constant for 5000 h	N.N.	°C	80	80	80	80	80	80	80	80	80
Lower service temperature	N.N.	°C	-200	-200	-200	-150	-150	-100	-200	-200	-200
Burning behaviour as per UL94 (sample thickness 3/6 mm)	DIN IEC 60695-11-10		HB/HB	HB/HB	HB/HB	HB/HB	HB/HB	HB/HB	HB/HB	HB/HB	HB/HB
Melting temperature	ISO 11357-1/-3	°C	130-135	130-135	130-135	130-135	130-135	130-135	130-135	130-135	130-135
Electrical properties											
Electric strength	IEC 60243-1	kV/mm	≤ 45		≤ 45	≤ 45			≤ 45		≤ 45
Volume resistivity	DIN EN 62631-3-1	Ohm × cm	> 10 ¹²	≤ 10 ⁶	> 10 ¹²	> 10 ¹²	≤ 10 ⁶		> 10 ¹²	≤ 10 ⁶	> 10 ¹²
Surface resistivity	DIN EN 62631-3-2	Ohm	> 10 ¹²	≤ 10 ⁹	> 10 ¹²	> 10 ¹²	≤ 10 ⁹		> 10 ¹²	≤ 10 ⁹	> 10 ¹²
Physiological properties											
Food safe according to FDA regulations			Yes	Yes	Yes	No	No	No	Yes	Yes	Yes
Food safe according to regulation EU 10/2011			Yes	Yes	Yes	No	No	No	Yes	Yes	Yes

Data sheet

	Standard	Unit	Murdotec® 2000 MC	Murdotec® 2000 MCE	Murdotec® 2000 MCWE	Murdotec® 1000 white ESD	Murdotec® 2000 MD	Murdotec® 2000 G	Murdotec® 2000 HS	Murdotec® 2000 C	Murdotec® 1000 AB	Murdotec® 1000 E	Murdotec® 2000 MOS
Technical properties													
Short mark	ISO 1043-1		UHMW-PE	UHMW-PE	UHMW-PE	UHMW-PE	UHMW-PE	UHMW-PE	UHMW-PE	UHMW-PE	UHMW-PE	UHMW-PE	UHMW-PE
Material colors			cobalt blue	traffic black	traffic black	natural	pastel blue	pastel green	ruby red	white	sky blue	traffic black	graphite grey
similar RAL			5013	9017	9017	9016	5024	6019	3003	9016	5015	9017	7024
Average molecular weight	N.N.	g/mol	9×10 ⁶	9×10 ⁶	9×10 ⁶	5×10 ⁶	9×10 ⁶	9×10 ⁶	9×10 ⁶	9×10 ⁶	5×10 ⁶	5×10 ⁶	9×10 ⁶
Sheet group	ISO 15527		1.1	1.1	1.1	1.2	1.1	1.1	1.1	1.1	1.2	1.2	1.1
Density	ISO 1183-1	g/cm ³	≤ 0.94	≤ 0.94	≤ 0.94	≤ 0.94	~ 1.14	≤ 0.94	≤ 0.94	~ 1.08	≤ 0.94	≤ 0.94	≤ 0.95
Water absorption - saturation at 23°C		%	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Mechanical properties													
Yield stress	ISO 527-1/-2	MPa	~ 20	~ 20	~ 20	~ 20	~ 20	~ 20	~ 20	~ 18	~ 20	~ 20	~ 20
Breaking elongation	ISO 527-2	%	> 250	> 220	> 300	> 250	> 200	> 250	> 200	> 200	> 300	> 300	> 200
Coefficient of elasticity	ISO 527-1/-2	MPa	> 700	> 700	> 700	> 700	> 600	> 600	> 600	> 700	> 700	> 700	> 600
Double-sided notch impact toughness (Charpy)	ISO 11542-2	kJ/m ²	≥ 120	≥ 120	≥ 170	~ 25	≥ 100	≥ 100	≥ 140	≥ 100	≥ 170	≥ 170	≥ 170
Shore hardness D	ISO 868		60-63	60-63	60-63	61-64	62-64	62-65	61-64	61-64	61-65	61-65	61-64
Ball indentation hardness	ISO 2039-1	N/mm ²	> 25	> 25	> 30	> 30	> 35	> 35	> 30	≥ 33	> 30	> 30	> 35
Wear resistance (Sand-Slurry-Test)	ISO 15527	%	80	80	120	120	100	80	80	~ 80	100	110	80
Average coefficient of friction against steel (0,25 m/s, 0,25 MPa, 24 h)		μ	~ 0.10	~ 0.10	~ 0.20	~ 0.20	~ 0.20	~ 0.20	~ 0.20	~ 0.18	~ 0.20	~ 0.20	~ 0.20
Average coefficient of friction against POM (0,25 m/s, 0,25 MPa, 24 h)		μ	~ 0.18	~ 0.18	~ 0.12								
Thermal properties													
Heat conductivity at 23 °C	ISO 22007-4	W/(K × m)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Linear thermal coefficient of expansion													
- Average value between 23 and 60 °C	ISO 11359-1/-2	m/(K × m)	20×10 ⁻⁵	20×10 ⁻⁵	20×10 ⁻⁵	20×10 ⁻⁵	20×10 ⁻⁵	17×10 ⁻⁵	20×10 ⁻⁵		20×10 ⁻⁵	20×10 ⁻⁵	17×10 ⁻⁵
Upper service temperature in air													
- short term	N.N.	°C	90	90	90	90	120	90	120	90	90	90	90
- constant for 5000 h	N.N.	°C	80	80	80	80	100	80	100	80	80	80	80
Lower service temperature	N.N.	°C	-200	-200	-200	-100	-200	-200	-200	-200	-200	-200	-200
Burning behaviour as per UL94 (sample thickness 3/6 mm)	DIN IEC 60695-11-10		HB/HB	HB/HB	HB/HB	HB/HB	HB/HB	HB/HB	HB/HB	HB/HB	HB/HB	HB/HB	HB/HB
Melting temperature	ISO 11357-1/-3	°C	130-135	130-135	130-135	130-135	130-135	130-135	130-135	130-135	130-135	130-135	130-135
Electrical properties													
Electric strength	IEC 60243-1	kV/mm	≤ 45				≤ 45	≤ 45	≤ 45	≤ 45	≤ 45		≤ 45
Volume resistivity	DIN EN 62631-3-1	Ohm × cm	> 10 ¹²	≤ 10 ⁶	≤ 10 ⁶	≤ 10 ⁹	> 10 ¹²	> 10 ¹²	> 10 ¹²	> 10 ¹²	> 10 ¹²	≤ 10 ⁶	> 10 ¹²
Surface resistivity	DIN EN 62631-3-2	Ohm	> 10 ¹²	≤ 10 ⁶	≤ 10 ⁶	10 ⁶ - 10 ⁹	> 10 ¹²	> 10 ¹²	> 10 ¹²	> 10 ¹²	> 10 ¹²	≤ 10 ⁶	> 10 ¹²
Physiological properties													
Food safe according to FDA regulations			Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No
Food safe according to regulation EU 10/2011			Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	No

Murdotec® 500 | 1000 | 2000 Colours

RAL 1021 Rape yellow	RAL 3020 Traffic red	RAL 5009 Azure blue	RAL 5017 Traffic blue	RAL 6024 Traffic green	RAL 7035 Light grey	RAL 8012 Red brown
RAL 1023 Traffic yellow	RAL 4007 Purple violet	RAL 5013 Cobalt blue	RAL 5021 Water blue	RAL 6026 Opal green	RAL 7037 Dusty grey	RAL 9016 Traffic white
RAL 2008 Bright red orange	RAL 5002 Ultramarine blue	RAL 5014 Pigeon blue	RAL 5024 Pastel blue	RAL 7024 Graphite grey	RAL 7045 Telegrey 1	RAL 9017 Traffic black
RAL 3003 Ruby red	RAL 5005 Signal blue	RAL 5015 Sky blue	RAL 6019 Pastel green			

 **Murdotec**
KUNSTSTOFFE