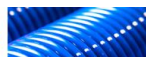
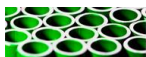


TECHNICAL DATASHEET

PA 11 ST

Material	Plasticized Polyamide 11 (PA11)																		
Product code	PA03																		
Product type	<ul style="list-style-type: none"> - Hoses - Spirals - Tubes 																		
Application	Hoses and tubes for pneumatic applications																		
Characteristics	<p>High quality flexible pneumatic hose with excellent mechanical and chemical properties. PA 11 is produced from a 100% renewable feedstock (castor oil).</p> <table> <tr> <td>Chemical:</td> <td>Generally good resistance to oil products, petrol, fatty substances, lubricants and solvents such as alcohol, ketones, esters and ether. Limited/poor resistance to many acids, strong bases, oxidizing agents and chlorine-based products <i>Please see separate chemical resistance chart for details</i></td> </tr> <tr> <td>Pressure:</td> <td>Very good</td> </tr> <tr> <td>UV- & weather:</td> <td>Excellent</td> </tr> <tr> <td>Working temperature:</td> <td>-40°C to +100°C</td> </tr> <tr> <td>Flame resistance:</td> <td>HB (UL 94)</td> </tr> <tr> <td>Surface hardness:</td> <td>Shore D63</td> </tr> <tr> <td>Flexural modulus:</td> <td>350 MPa</td> </tr> <tr> <td>Moisture absorption:</td> <td>< 1,6 %</td> </tr> <tr> <td>Remarks:</td> <td>-</td> </tr> </table>	Chemical:	Generally good resistance to oil products, petrol, fatty substances, lubricants and solvents such as alcohol, ketones, esters and ether. Limited/poor resistance to many acids, strong bases, oxidizing agents and chlorine-based products <i>Please see separate chemical resistance chart for details</i>	Pressure:	Very good	UV- & weather:	Excellent	Working temperature:	-40°C to +100°C	Flame resistance:	HB (UL 94)	Surface hardness:	Shore D63	Flexural modulus:	350 MPa	Moisture absorption:	< 1,6 %	Remarks:	-
Chemical:	Generally good resistance to oil products, petrol, fatty substances, lubricants and solvents such as alcohol, ketones, esters and ether. Limited/poor resistance to many acids, strong bases, oxidizing agents and chlorine-based products <i>Please see separate chemical resistance chart for details</i>																		
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Flame resistance:	HB (UL 94)																		
Surface hardness:	Shore D63																		
Flexural modulus:	350 MPa																		
Moisture absorption:	< 1,6 %																		
Remarks:	-																		
Standard/Norms	Fulfil DIN 73378 and 74324: PA11-PHL																		
Compliance	<ul style="list-style-type: none"> - EC Regulation 1907/2006 (REACH) - Directive 2011/65/EU (ROHS) - Do not contain dual use additives 																		
Approval	Not approved for food contact																		
Color	<p>Standard: Natural, white, black, grey, red, orange, yellow, green and blue</p> <p>Specialties: Special colors at an additional charge</p>																		
Print	Black and white printing at an additional charge																		



TECHNICAL DATASHEET

Packaging

Free coils, coils in carton boxes or plastic bags and on spools
Please see separate data sheet for packaging options

Data overview

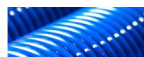
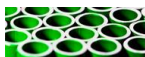
Specification of tolerances, bending radius and working pressure for standard dimensions

Tolerance: Produced in accordance with DIN 16982
Bending radius: 90° bending with min. deformation at 20°C
Working pressure: Theoretical value based on hoop stress data and a safety factor of 2,5 of burst pressure. Working pressure is stated for air only.

Dimension mm	Tolerance mm		Weight g/m	Bending mm	Working pressure bar				
	OD	ID			20°C	30°C	50°C	60°C	80°C
4,0/2,0	+/-0,1	+/-0,1	9,90	15	65	55	44	39	32
4,0/2,5	+/-0,1	+/-0,1	8,04	20	45	38	30	27	22
4,0/2,7	+/-0,1	+/-0,1	7,19	-	38	32	26	23	19
5,0/2,0	+/-0,1	+/-0,1	17,33	-	84	71	56	50	41
5,0/3,0	+/-0,1	+/-0,1	13,20	25	49	42	33	30	24
5,0/3,15	+/-0,1	+/-0,1	12,44	-	44	38	30	27	22
6,0/3,0	+/-0,1	+/-0,1	22,28	30	65	55	44	39	32
6,0/4,0	+/-0,1	+/-0,1	16,50	30	39	33	26	24	19
6,0/4,5	+/-0,1	+/-0,1	12,99	40	28	24	19	17	14
7,0/5,0	+/-0,1	+/-0,1	19,80	35	33	28	22	20	16
8,0/5,0	+/-0,1	+/-0,1	32,18	40	45	38	30	27	22
8,0/5,5	+/-0,1	+/-0,1	27,84	-	36	31	24	22	18
8,0/6,0	+/-0,1	+/-0,1	23,10	40	28	24	19	17	14
9,0/7,0	+/-0,1	+/-0,1	26,40	55	25	21	7	15	12
10,0/6,0	+/-0,1	+/-0,1	52,80	60	49	42	33	30	24
10,0/7,0	+/-0,1	+/-0,1	42,08	60	35	29	23	21	17
10,0/7,5	+/-0,1	+/-0,1	36,09	50	28	24	19	17	14
10,0/8,0	+/-0,1	+/-0,1	29,70	60	22	18	15	13	11
12,0/8,0	+/-0,1	+/-0,1	66,00	65	39	33	26	24	19
12,0/9,0	+/-0,1	+/-0,1	51,98	60	28	24	19	17	14
12,0/9,5	+/-0,1	+/-0,1	44,34	-	23	19	15	14	11
12,0/10,0	+/-0,1	+/-0,1	36,30	75	18	15	12	11	9
14,0/10,0	+/-0,15	+/-0,1	79,20	75	33	28	22	20	16
14,0/11,0	+/-0,1	+/-0,1	61,88	85	24	20	16	14	12
14,0/12,0	+/-0,1	+/-0,1	42,90	90	15	13	10	9	7
15,0/12,0	+/-0,15	+/-0,1	66,83	90	22	18	15	13	11
16,0/12,0	+/-0,15	+/-0,15	92,40	95	28	24	19	17	14
16,0/13,0	+/-0,15	+/-0,15	71,78	110	20	17	14	12	10
18,0/14,0	+/-0,15	+/-0,15	105,60	100	25	21	17	15	12
18,0/16,0	+/-0,15	+/-0,15	56,10	-	12	10	8	7	6
20,0/16,0	+/-0,15	+/-0,15	118,80	140	22	18	15	13	11
20,0/18,0	+/-0,15	+/-0,15	62,70	-	10	9	7	6	5
22,0/18,0	+/-0,15	+/-0,15	132,00	170	20	17	13	12	10
24,0/20,0	+/-0,15	+/-0,15	145,20	-	18	15	12	11	9
26,0/22,0	+/-0,15	+/-0,15	158,40	-	16	14	11	10	8

Origin

Products are "Made in Denmark" and raw material for the products originates from EU or EFTA countries



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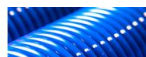
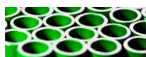
TECHNICAL DATASHEET

Documentation

Specific documentation is available for:

- chemical resistance
- permeability
- antistatic classification
- standard tolerances
- packaging
- regulatory status

The information contained in this document is based on information obtain from raw material suppliers, data selected from the literature and specific testing, but shall in no event be held to constitute or imply any warranty, undertaking, express or implied commitment from our part. Our formal specifications define the limit of our commitment. No liability whatsoever can be accepted by Knudsen Extrusion ApS regarding the handling or use of the product or products concerned which must in all cases be employed in accordance with all relevant laws and/or regulations in force in the country or countries concerned.



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