





Usage of hoses

No. 400/28 V7

Hoses with 5 mm and 3 mm inner diameter are described here in this Technical Note

Dräger external pumps (p/n 8319400 & 8327100), Dräger X-zone and X-am 8000.
(Note: the flooding time calculation within X-am 8000 are made for 3 mm hoses)

5mm

	Fluorinated rubber	Rubber	Tygon E-3603	Tygon w. PTFE-lining
				
Part number (max. delivery length / PU*)	1203150 (100 m)	1180681 (100 m)	8320766 (150 m)	4594679 (Spool of 15 m) 8326980 (3 m)
Material	FKM	CR-NR DWN 2715	PVC	PVC with PTFE
Chemical description	Fluorinated rubber	Chloroprene rubber / Natural rubber	Polyvinyl chloride	Tygon coated and Polytetrafluoroethylene (PTFE) lined
Inner diameter, approx.	5 mm	5 mm	5 mm	5 mm
Outside diameter, approx.	8 mm	9 mm	8 mm	8 mm
Section thickness, approx.	1.5 mm	2 mm	1.5 mm	1.5 mm
Rigidity	75 Shore	60 Shore A	56 Shore A	
Color	Black	Black	Transparent	Transparent
Advantage	Suitable for vapors	Electric conductive	Phthalate-free (plasticizer)	Especially for aggressive gases like chlorine
Temperature range	-15 °C to + 200 °C	-30°C to +134°C	-46°C to +74°C	-36°C to +74°C
Use in Ex areas	Suitable	Suitable	Suitable	Suitable
Antistatic	No	Yes	No	No
Further features	Solvent resistant		Flexible, no kinking	

* packing unit

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Test results + measuring recommendation: flow 500 ml/min & 5 mm hoses, different flow need different flooding times.

		Indication for 10 m FKM 1203150				Indication for 10 m Antistatic rubber 1180681				Indication for 10 m Tygon E-3603 8320766				Indication for 10 m Tygon SE-200 w. PTFE 4594679					
		Gassing / floating time				Gassing / floating time				Gassing / floating time				Gassing / floating time					
Gas	code	1 min	3 min	5 min	> 5 min	1 min	3 min	5 min	> 5 min	1 min	3 min	5 min	> 5 min	1 min	3 min	5 min	> 5 min		
Carbon dioxide	CO ₂	X				X				X				X					
Carbon monoxide	CO	X				X				X				X					
Oxygen	O ₂	X				X				X				X					
Nitrogen dioxide	NO ₂	X				X							X	X					
Chlorine *	Cl ₂ *	Please use a polytetrafluoroethylene (PTFE) hose														X			
Hydrogen sulphide	H ₂ S	X				X				X				X					
Phosgene	COCl ₂		X				X						X				X		
Hydrogen Cyanide	HCN			X			X						X		X				
Phosphine	PH ₃		X				X			X				X					
Ammonia	NH ₃				X			X			X				X				
Nitric oxide	NO		X					X		X				X					
Sulfur dioxide	SO ₂			X			X						X	X					
Lightly volatile hydrocarbons or gases	Methane – Hexane	X				X				X				X					
Medium volatile hydrocarbons or gases	Acetic acid, CH ₃ COOH			X				X							X				
	Toluene, C ₆ H ₅ CH ₃			X				X							X				
	Octane, C ₈ H ₁₈			X				X							X				
Low volatile hydrocarbons or vapors	n-Nonane, C ₉ H ₂₀			X											X				
	Styrene, C ₆ H ₅ CH=CH ₂			X											X				

Green: applicable, arrived t₉₀- time
Yellow: conditional applicable longer floating time t₉₀-time arrived in > 5 minutes
Red: not applicable

* Up to 1 meter fluorinated rubber (FKM) is applicable




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Hoses with 3 mm inner diameter for the use with the instruments:

Dräger X-am 8000 or X-am Pumps (p/n 8319400, 8327100) and X-zone 5x00

3,2 mm

	Fluorinated rubber	Tygon E-3603	Rubber
			
Part number (max. delivery length / PU*)	8325837 (100 m)	8325838 (150 m)	8325839 (100 m)
Material	FKM	PVC	CR-NR
Chemical description	Fluorinated rubber	Polyvinyl chloride	Chloroprene rubber / Natural rubber
Inner diameter, approx.	3.2 mm	3.2 mm	3.2 mm
Outside diameter, approx.	6.4 mm	6.4 mm	6.4 mm
Section thickness, approx.	1.6 mm	1.6 mm	1.5 mm
Rigidity		56 Shore A	60 Shore A
Color	Black	Transparent	Black
Advantage	Suitable for vapors	Phthalate-free (plasticizer)	Electric conductive
Temperature range	-15 °C to + 200 °C	-55 °C to 74 °C	-30°C to 134°C
Use in Ex areas	Suitable	Suitable	Suitable
Antistatic	No	No	Yes
Further features	Solvent resistant	Flexible, no kinking	

* packing unit

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Test results + measuring recommendation: flow 350ml/min & 3mm hoses, different flow needs different flooding time.

		Indication for 10 m FKM 8325837				Indication for 10 m PVC 8325838				Indication for 10 m Antistatic rubber 8325839			
		Gassing / floating time				Gassing / floating time				Gassing / floating time			
Gas	code	1 min	3 min	5 min	> 5 min	1 min	3 min	5 min	> 5 min	1 min	3 min	5 min	> 5 min
Carbon dioxide	CO ₂	X				X				X			
Carbon monoxide	CO	X				X				X			
Oxygen	O ₂	X				X				X			
Nitrogen Dioxide	NO ₂		X				X				X		
Chlorine *	Cl ₂ *	Please use a polytetrafluoroethylene (PTFE) hose!											
Hydrogen sulphide	H ₂ S	X				X					X		
Phosgene	COCl ₂	Not yet measured											
Hydrogen cyanide	HCN		X					X		X			
Phosphine	PH ₃	X				X				X			
Ammonia	NH ₃			X					X				X
Nitrogen monoxide	NO	X				X				X			
Sulphur dioxide	SO ₂		X					X		Not yet measured			
Lightly volatile hydrocarbons or gases	Methane - Hexane	X				X				X			
Medium volatile hydrocarbons or gases	Acetic acid, Toluene, Octane			X								X	
				X								X	
Low volatile hydrocarbons or vapors	n-Nonane, Styrene			X									
				X									

Green: applicable, arrived t₉₀- time
Yellow: conditional applicable longer floating time t₉₀-time arrived in > 5 minutes
Red: not applicable

* Up to 1 meter fluorinated rubber (FKM) is applicable