



TITANIUM

TITAN PLAST



UPVC Pipes & Fittings





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UPVC Pipes and Fittings are ideally suited for variety applications where high quality and durable pipe work system required..

- Under ground water distribution networks
- Under ground drainage networks
- Drainage installations between manholes
- Irrigations networks
- Aquaculture Networks
- Air coditioning drain systems
- Industrial Chemical Applications

● Imperial Standard (Inch Size)

High Pressure pipes : BSEN 1452-2:2009 (This standard supercedes BS 3505 : 1986)

High Pressure Fittings : BSEN 1452-3:2010 (This standard supercedes BS 4346-3 : 1882)

Threaded Joints are as per BS 21 & ISO 7-1

● Metric Standard (Millimeter Size)

High Pressure pipes : DIN 8061/8062

High Pressure Fittings : DIN 8063

● Colour & Length

The colour of the pipe dark grey, grey, orange & white. The fittings colours is dark grey and all pipes are manufactured in 4mtr, 5.80mtr & 6.00mtr length.

All pipes sizes are supplied with plain ends, solvent socketed & push fits (R/R).



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General Properties of UPVC

Sr	Properties
1	Composition (CH ₂ -CH-Cl) _n
2	Density 1.42 - 1.45
3	Thermal Conductivity : 1.60W/m ^o C
4	Specific Heat : 1100J/Kg/ ^o C
5	Elastic Limit : 35-52 Mpa
6	Tensile Strength : 30-70 Mpa
7	Compressive Strength : 55-60 Mpa
8	Poissons Ratio : 0.38 - 0.43

Mechanical, Physical, Characteristics of UPVC Pipes

Sr.	Characteristics	Parameters	Test Method
1	Resistance to Internal Pressure	At 20°C , 42Mpa for 1 hr	ISO 1161-1
2	Impact Strength	True Impact Rate <10%	EN 744
3	Vicat Softening Temperature	>80°C	ISO 2507-1
4	Longitudinal Reversion	<5% at 150°C	ISO 2505
5	Resistance to Dichloromethane	No attack at any part of test piece at 15°C. The wall of the pipe shall be opaque and shall not transmit more than 0.2 %	ISO 9852
6	Opacity		ISO 7686

Mechanical, Physical, Characteristics of UPVC Fittings

Sr.	Characteristics	Parameters	Test Method
1	Resistance to Internal Pressure	At 20°C , 3.36XPN for 1 hr	ISO 1161-1
2	Vicat Softening Temperature	>74°C	ISO 2507-1
3	Effect on heating	At 150°C 1 hr depth of crack ,delamination <30% of wall thickness	ISO 2505
4	Opacity	shall not transmit more than 0.2 % of visible light	Method B :Air ISO 7686



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The Quality Assurance Laboratory

is equipped with state-of-the-art equipment and staffed with trained quality control inspectors. The laboratory performs 'round the clock' testing on products manufactured at our factories to ensure that quality is guaranteed. A continuous rigorous type test program is carried out including process verification and long term pressure testing to ensure our fullest commitment to the highest industry quality standards.

We ensure the quality requirements of the client are met at every stage. This is typically by way of project-specific Inspection and Test Plan. We have a comprehensive Quality Control system that monitors every stage of production from receipt of raw materials to product delivery.



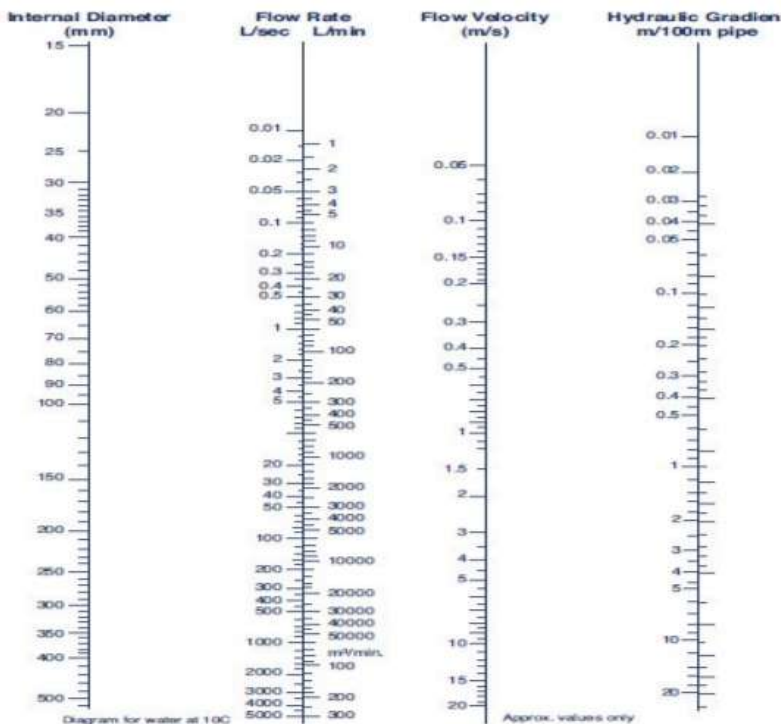
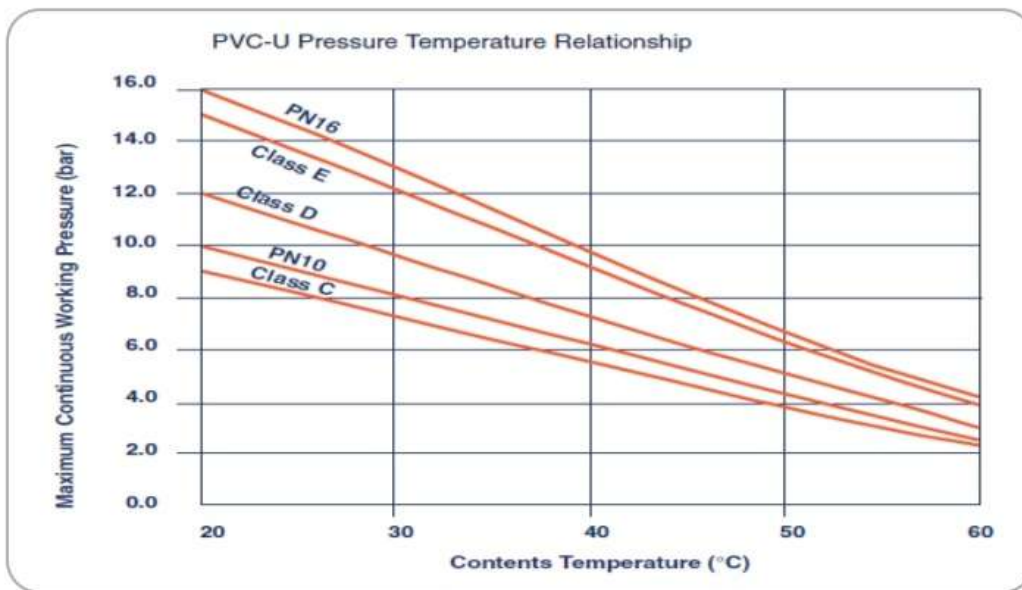
Working Temperature

UPVC pipes and fittings are recommended for applications where operating temperature is in between 5 to 60 C.

Working Pressure

The working pressure of UPVC pipes and fittings is decided as per the manufacturing standard of the subjected pipe.

At temperature above 20°C the operating pressure is reduced as shown in the below graph.



Flow Calculations

Pressure Drop in pipes

Pressure drop due to friction of practical purposes can be determined using the Flow Nomogram diagram.

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Pipe supports and clips should provide lateral restraint and allow free, unrestricted, axial pipe movement. The recommended distance between supports for UPVC pipes filled with water is given in the following table.

Pipe Size	Support Distance at 20°C (In m)	Support Distance at 50°C
20mm/1/2"	0.9	0.6
25mm/ 3/4"	1.0	0.7
32mm/ 1"	1.1	0.8
40mm/ 1 1/4"	1.2	0.9
50mm /1 1/2"	1.3	1.0
63mm/ 2"	1.4	1.1
75mm/ 2 1/2"	1.5	1.2
90mm/ 3"	1.6	1.3
110mm/ 4"	1.9	1.3
160mm/ 6"	2.3	1.6



Assembly Instructions for Solvent Cement Joining

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1



Cut the pipe at 90° angle to the pipe axis using suitable sharp pipe cutter.

2



Remove the burrs from the outside and inside of the pipe.

3



Clean the pipe with dry cloth, in order to avoid any dust or sand that might effect the quality of the joint.

4



Do not allow the primer to run down inside of the fitting and pipe.

5



Apply even layer of solvent cement to the pipe equal to fitting socket depth and fitting upto to the socket length.

6



Do not allow the solvent cement to run down inside of the fitting and pipe.

7



Immediately while cement is still wet asseble the pipe and fitting.

8



Remove the excess cement from the pipe and fitting.

9

Handle newly assembled carefully untill initial set has taken place.

10

Same procedure can follow for the pipe to socket joining also.

High Pressure Pipe Dimensions

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Imperial Size Pressure Pipes : BS EN 1452-2: 2009 (Supercedes BS 3505)

Size	Outer Diameter (mm)		Wall Thickness (mm)					
	Min	Max	Class-E / PN-15		Class-D / PN-12		Class-C / PN-9	
			Min	Max	Min	Max	Min	Max
1/2"	21.20	21.50	1.70	2.10	-	-	-	-
3/4"	26.60	26.90	1.90	2.50	-	-	-	-
1"	33.40	33.70	2.20	2.80	-	-	-	-
1 1/4"	42.10	42.40	2.70	3.30	2.20	2.70	-	-
1 1/2"	48.10	48.40	3.10	3.70	2.50	3.00	-	-
2"	60.20	60.50	3.90	4.50	3.10	3.70	2.50	3.00
3"	88.70	89.10	5.70	6.60	4.60	5.40	3.50	4.10
4"	114.10	114.50	7.30	8.40	6.00	6.90	4.50	5.20
6"	168.00	168.50	10.80	12.50	8.80	10.20	6.60	7.60
8"	218.80	219.40	12.60	14.50	10.30	11.90	7.80	9.00
10"	272.60	273.40	15.70	18.10	12.80	14.80		
12"	323.40	324.40	18.70	21.60	15.20	17.50		

Metric Size Pressure Pipes : BS EN 1452-2 : 2009

Size	Outer Diameter (mm)		Wall Thickness (mm)					
	Min	Max	PN-16		PN-10		PN-6	
			Min	Max	Min	Max	Min	Max
20mm	20.00	20.20	1.50	1.90	-	-	-	-
25mm	25.00	25.20	1.90	2.30	-	-	-	-
32mm	32.00	32.20	2.40	2.90	1.60	2.00	-	-
40mm	40.00	40.20	3.00	3.50	1.90	2.30	1.50	1.90
50mm	50.00	50.20	3.70	4.30	2.40	2.90	1.60	2.00
63mm	63.00	63.20	4.70	5.40	3.00	3.50	2.30	2.80
75mm	75.00	75.30	5.60	6.40	3.60	4.20	2.30	2.80
90mm	90.00	90.30	6.70	7.60	4.30	5.00	2.80	3.30
110mm	110.00	110.30	6.60	7.50	4.20	5.00	2.70	3.30
160mm	160.00	160.40	9.50	10.70	6.20	7.10	4.00	4.60
200mm	200.00	200.40	11.90	13.30	7.70	8.70	4.90	5.60
250mm	250.00	250.50	14.80	16.50	9.60	10.80	6.20	7.10
315mm	315.00	315.60	18.70	20.80	12.10	13.60	7.70	8.70
400mm	400.00	400.70	23.70	26.30	15.30	17.10	9.80	11.00

20 TO 90mm PN Based on design coefficient C = 2.5
110 to 400mm PN Based on design coefficient C = 2.00

High Pressure Pipe Dimensions

TITAN PLAST

Metric Size Pressure Pipes : DIN 8061 / 8062

Size	Outer Diameter (mm)		Wall Thickness (mm)					
	Min	Max	PN-16		PN-10		PN-6	
			Min	Max	Min	Max	Min	Max
20mm	20.00	20.20	1.50	1.90	-	-	-	-
25mm	25.00	25.20	1.90	2.30	-	-	-	-
32mm	32.00	32.20	2.40	2.90	1.60	2.00	-	-
40mm	40.00	40.20	3.00	3.50	1.90	2.30	1.80	2.20
50mm	50.00	50.20	3.70	4.30	2.40	2.90	1.80	2.20
63mm	63.00	63.20	4.70	5.40	3.00	3.50	1.90	2.30
75mm	75.00	75.30	5.60	6.40	3.60	4.20	2.20	2.70
90mm	90.00	90.30	6.70	7.60	4.30	5.00	2.70	3.20
110mm	110.00	110.30	8.20	9.30	5.30	6.10	3.20	3.80
160mm	160.00	160.40	11.90	13.30	7.70	8.70	4.70	5.40
200mm	200.00	200.40	14.90	16.60	9.60	10.80	5.90	6.70
225mm	225.00	225.50	16.70	18.60	10.80	12.10	6.60	7.50
250mm	250.00	250.50	18.60	20.70	11.90	13.30	7.30	8.30
280mm	280.00	280.60	20.80	23.10	13.40	15.00	8.20	9.30
315mm	315.00	315.60	23.40	26.00	15.00	16.70	9.2010.40	
355mm	355.00	355.70	26.30	29.90	16.90	18.80	10.4011.70	
400mm	400.00	400.70	29.70	32.90	19.10	21.30	11.7013.10	

Metric Size Pressure Pipes : ISO-161-1

Size	Outer Diameter (mm)		Wall Thickness (mm)					
	Min	Max	PN-16		PN-10		PN-6	
			Min	Max	Min	Max	Min	Max
20mm	20.00	20.20	1.20	1.60	-	-	-	-
25mm	25.00	25.20	1.50	1.90	-	-	-	-
32mm	32.00	32.20	1.90	2.30	-	-	-	-
40mm	40.00	40.20	2.40	2.90	1.60	2.00	-	-
50mm	50.00	50.20	3.00	3.60	2.00	2.50	1.30	1.70
63mm	63.00	63.20	3.80	4.40	2.50	3.00	1.60	2.20
75mm	75.00	75.30	4.50	5.20	2.90	3.40	1.90	2.30
90mm	90.00	90.30	5.40	6.20	3.50	4.10	2.20	2.70
110mm	110.00	110.30	6.60	7.50	4.20	4.90	2.70	3.20
160mm	160.00	160.40	9.50	10.70	6.20	7.10	4.00	4.70
200mm	200.00	200.40	11.90	13.30	7.70	8.70	4.90	5.60
250mm	250.00	250.50	14.80	16.50	9.60	10.80	6.20	7.10
315mm	315.00	315.60	18.70	20.80	12.10	13.60	7.70	8.70
400mm	400.00	400.70	23.70	26.30	15.30	17.10	9.8011.00	

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ASTM D 1785: SCHEDULE 40 & 80

Nominal Size	Mean Outside Diameter (mm)		Wall Thickness (mm) & Pressure Rating (PSI)					
			Schedule 40			Schedule 80		
Inch	MIN.	MAX.	MIN.	MAX.	PSI	MIN.	MAX.	PSI
1/2	21.24	21.44	2.77	3.28	600	3.73	4.24	850
3/4	26.57	26.77	2.87	3.38	480	3.91	4.42	690
1	33.27	33.53	3.36	3.89	450	4.55	5.08	630
1¼	42.03	42.29	3.56	4.06	370	4.85	5.44	520
1½	48.11	48.41	3.68	4.19	330	5.08	5.69	470
2	60.17	60.47	3.91	4.42	280	5.54	6.20	400
3	88.70	89.10	5.49	6.15	260	7.62	8.53	370
4	114.07	114.53	6.02	6.73	220	8.56	9.58	320
6	168.00	168.56	7.11	7.98	180	10.97	12.29	280
8	218.70	219.46	8.18	9.17	160	12.70	14.22	250

Standard Length : 4, 5.8 & 6 meters
 Colour : Schedule 40 - white & schedule 80 - dark grey
 Socket Type : Solvent Weld
 Note: will be Manufactured as PVC - 1 120

ASTMD 2241 : SDR Series

Nominal Size	Mean Outside Diameter (mm)		Wall Thickness (mm) & Pressure Rating (BAR)												
			SDR 41 100 PSI		SDR 32.5 125 PSI		SDR 26 160 PSI		SDR 21 200 PSI		SDR 17 250 PSI		SDR 13.5 315 PSI		
Inch	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Min.	
1/2	21.24	21.44												1.57	2.08
3/4	26.57	26.77							1.52	2.03	1.57	2.08	1.98	2.49	
1	33.27	33.53					1.52	2.03	1.60	2.11	1.96	2.46	2.46	2.97	
1¼	42.03	42.29			1.52	2.03	1.63	2.13	2.01	2.52	2.49	3.00	3.12	3.63	
1½	48.11	48.41			1.52	2.03	1.85	2.36	2.29	2.80	2.84	3.35	3.58	4.09	
2	60.17	60.47			1.85	2.36	2.31	2.82	2.87	3.38	3.56	4.06	4.47	4.98	
3	88.70	89.10	2.16	2.67	2.74	3.25	3.43	3.94	4.24	4.75	5.23	5.87	6.58	7.37	
4	114.07	114.53	2.80	3.30	3.51	4.01	4.39	4.90	5.44	6.10	6.73	7.54	8.46	9.47	
6	168.00	168.56	4.11	4.62	5.18	5.79	6.48	7.26	8.03	9.00	9.91	11.10	12.47	13.97	
8	218.70	219.46	5.33	5.97	6.73	7.54	8.43	9.45	10.41	11.66	12.90	15.45			

Standard Length : 5, 8 & 6 meters
 Colour : White
 Socket Type : Solvent Weld
 Note: will be Manufactured as PVC - 1 120

$$SDR = \frac{\text{OUTSIDE DIAMETER}}{\text{MINIMUM WALL THICKNESS}}$$

TITAN PLAST

Imperial (Inch) Size Class-E/PN-15 As per BSEN 1452-3

SIZE	d	L	Z	E	CODE	PACKING
1/2"	21.3	17	11	26	A1HPF90E0.5IG	450
3/4"	26.7	20	14	32	A1HPF90E0.75IG	250
1"	33.5	23	17	39	A1HPF90E1IG	150
1 1/4"	42.2	27	23	50	A1HPF90E1.25IG	100
1 1/2"	48.2	32	26	58	A1HPF90E1.5IG	60
2"	60.3	39	33	73	A1HPF90E2IG	65
2 1/2"	75.1	44	39	90	A1HPF90E75MG	30
3"	88.8	51	47	106	A1HPF90E3IG	20
4"	114.2	65	57	130	A1HPF90E4IG	11
6"	168.2	90	82	198	A1HPF90E6IG	3



Metric Size PN-16 As per DIN 8063

SIZE	d	L	Z	E	CODE	PACKING
20mm	20.1	17	11	26	A1HPF90E20MG	650
25mm	25.1	20	14	32	A1HPF90E25MG	350
32mm	32.1	23	17	39	A1HPF90E32MG	200
40mm	40.1	27	23	50	A1HPF90E40MG	100
50mm	50.1	32	26	58	A1HPF90E50MG	50
63mm	63.1	39	33	73	A1HPF90E63MG	60
75mm	75.1	44	39	90	A1HPF90E75MG	30
90mm	90.1	51	47	106	A1HPF90E90MG	20
110mm	110.1	65	57	130	A1HPF90E110MG	11
160mm	160.2	90	82	185	A1HPF90E160MG	3

Imperial (Inch) Size Class-E/PN-15 As per BSEN 1452-3

SIZE	d	L	Z	E	CODE	PACKING
1/2"	21.3	17	5	26	A1HPF45E0.5IG	700
3/4"	26.7	20	6	32	A1HPF45E0.75IG	400
1"	33.5	23	8	39	A1HPF45E1IG	250
1 1/4"	42.2	27	10	50	A1HPF45E1.25IG	125
1 1/2"	48.2	32	12	58	A1HPF45E1.5IG	75
2"	60.3	39	14	73	A1HPF45E2IG	80
2 1/2"	75.1	44	17	90	A1HPF45E75MG	35
3"	88.8	51	20	106	A1HPF45E3IG	25
4"	114.2	65	24	130	A1HPF45E4IG	12
6"	168.2	90	35	198	A1HPF45E6IG	5



Metric Size PN-16 As per DIN 8063

SIZE	d	L	Z	E	CODE	PACKING
20mm	20.1	17	5	26	A1HPF45E20MG	700
25mm	25.1	20	6	32	A1HPF45E25MG	400
32mm	32.1	23	8	39	A1HPF45E32MG	250
40mm	40.1	27	10	50	A1HPF45E40MG	125
50mm	50.1	32	12	58	A1HPF45E50MG	60
63mm	63.1	39	14	73	A1HPF45E63MG	80
75mm	75.1	44	17	90	A1HPF45E75MG	35
90mm	90.1	51	20	106	A1HPF45E90MG	25
110mm	110.1	65	24	130	A1HPF45E110MG	12
160mm	160.2	90	35	185	A1HPF45E160MG	5

High Pressure Fittings

TITAN PLAST

Imperial (Inch) Size Class-E/PN-15 As per BSEN 1452-3

SIZE	d	L	Z	E	CODE	PACKING
1/2"	21.3	17	11	26	A1HPFT0.5IG	250
3/4"	26.7	20	14	32	A1HPFT0.75IG	150
1"	33.5	23	17	39	A1HPFT1IG	100
1 1/4"	42.2	27	23	50	A1HPFT1.25IG	70
1 1/2"	48.2	32	26	58	A1HPFT1.5IG	45
2"	60.3	39	33	73	A1HPFT2IG	45
2 1/2"	75.1	44	39	90	A1HPFT75MG	25
3"	88.8	51	47	106	A1HPFT3IG	17
4"	114.2	65	57	130	A1HPFT4IG	7
6"	168.2	90	82	198	A1HPFT6IG	2



Metric Size PN-16 As per DIN 8063

SIZE	d	L	Z	E	CODE	PACKING
20mm	20.1	17	11	26	A1HPFT20MG	400
25mm	25.1	20	14	32	A1HPFT25MG	250
32mm	32.1	23	17	39	A1HPFT32MG	125
40mm	40.1	27	23	50	A1HPFT40MG	70
50mm	50.1	32	26	58	A1HPFT50MG	35
63mm	63.1	39	33	73	A1HPFT63MG	40
75mm	75.1	44	39	90	A1HPFT75MG	25
90mm	90.1	51	47	106	A1HPFT90MG	17
110mm	110.1	65	57	130	A1HPFT110MG	7
160mm	160.2	90	82	185	A1HPFT160MG	2

TITAN PLAST

Imperial (Inch) Size Class-E/PN-15 As per BSEN 1452-3

SIZE	d	L	Z	E	CODE	PACKING
1/2"	21.3	17	3	26	A1HPFS0.5IG	600
3/4"	26.7	20	3	32	A1HPFS0.75IG	300
1"	33.5	23	3	39	A1HPFS1IG	250
1 1/4"	42.2	27	3	50	A1HPFS1.25IG	180
1 1/2"	48.2	32	3	58	A1HPFS1.5IG	120
2"	60.3	39	3	73	A1HPFS2IG	60
2 1/2"	75.1	44	4	90	A1HPFS75MG	70
3"	88.8	51	5	106	A1HPFS3IG	42
4"	114.2	65	6	130	A1HPFS4IG	15
6"	168.2	90	8	198	A1HPFS6IG	7



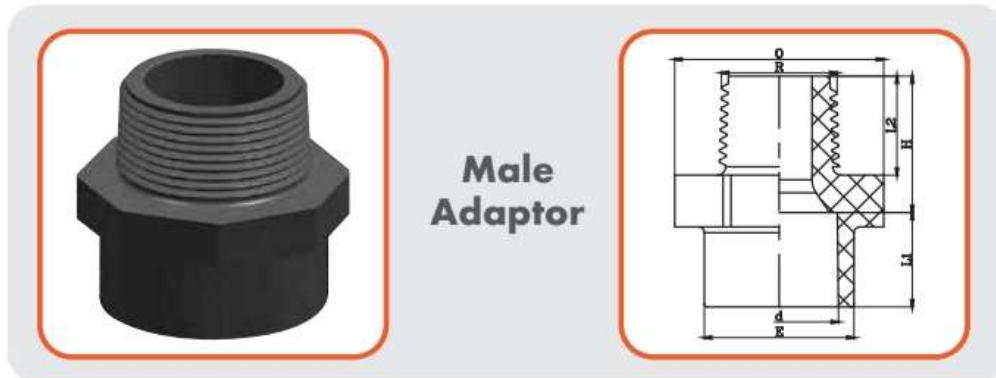
Metric Size PN-16 As per DIN 8063

SIZE	d	L	Z	E	CODE	PACKING
20mm	20.1	17	3	26	A1HPFS20MG	600
25mm	25.1	20	3	32	A1HPFS25MG	450
32mm	32.1	23	3	39	A1HPFS32MG	250
40mm	40.1	27	3	50	A1HPFS40MG	180
50mm	50.1	32	3	58	A1HPFS50MG	100
63mm	63.1	39	3	73	A1HPFS63MG	50
75mm	75.1	44	4	90	A1HPFS75MG	70
90mm	90.1	51	5	106	A1HPFS90MG	42
110mm	110.1	65	6	130	A1HPFS110MG	15
160mm	160.2	90	8	185	A1HPFS160MG	7

TITAN PLAST

Imperial (Inch) Size Class-E/PN-15 As per BSEN 1452-3

SIZE	d	L1	R	L2	O	CODE	PACKING
1/2"	21.3	17	1/2"	17	37	A1HPFMA0.5IG	750
3/4"	26.7	20	3/4"	19	41	A1HPFMA0.75IG	500
1"	33.5	23	1"	22	46	A1HPFMA1IG	250
1 1/4"	42.2	27	1 1/4"	24	55	A1HPFMA1.25IG	150
1 1/2"	48.2	32	1 1/2"	25	65	A1HPFMA1.5IG	120
2"	60.3	39	2"	29	80	A1HPFMA2IG	120
2 1/2"	75.1	44	2 1/2"	31	90	A1HPFMA75X2.5MG	80
3"	88.8	51	3"	34	105	A1HPFMA3IG	50
4"	114.2	65	4"	40	130	A1HPFMA4IG	20



Metric Size PN-16 As per DIN 8063

SIZE	d	L1	R	L2	O	CODE	PACKING
25/20mm	20.1	17	1/2"	17	37	A1HPFMA20X0.5MG	750
32/25mm	25.1	20	3/4"	19	41	A1HPFMA25X0.75MG	500
40/32mm	32.1	23	1"	22	46	A1HPFMA32X1MG	250
50/40mm	40.1	27	1 1/4"	24	55	A1HPFMA40X1.25MG	150
63/50mm	50.1	32	1 1/2"	25	65	A1HPFMA50X1.5MG	120
75/63mm	63.1	39	2"	29	80	A1HPFMA63X2MG	120
90/75mm	75.1	44	2 1/2"	31	90	A1HPFMA75X2.5MG	80
110/90mm	90.1	51	3"	34	105	A1HPFMA90X3MG	50
110mm	110.1	65	4"	40	130	A1HPFMA110X4MG	20

TITAN PLAST

Imperial (Inch) Size Class-E/PN-15 As per BSEN 1452-3

SIZE	d	L1	RP	L2	O	CODE	PACKING
1/2"	21.3	17	1/2"	17	36	A1HPFFS0.5IG	600
3/4"	26.7	20	3/4"	18	40	A1HPFFS0.75IG	350
1"	33.5	23	1"	20	50	A1HPFFS1IG	250
1 1/4"	42.2	27	1 1/4"	22	59	A1HPFFS1.25IG	125
1 1/2"	48.2	32	1 1/2"	25	70	A1HPFFS1.5IG	90
2"	60.3	39	2"	28	85	A1HPFFS2IG	100
2 1/2"	75.1	44	2 1/2"	31	90	A1HPFFS75X2.5MG	75
3"	88.8	51	3"	34	104	A1HPFFS3IG	50
4"	114.2	65	4"	40	130	A1HPFFS4IG	20



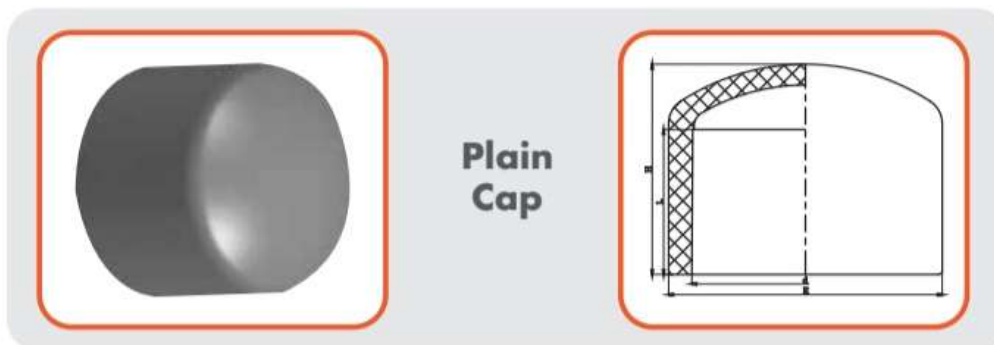
Metric Size PN-16 As per DIN 8063

SIZE	d	L1	RP	L2	O	CODE	PACKING
25/20mm	20.1	17	1/2"	17	36	A1HPFFS20X0.5MG	600
32/25mm	25.1	20	3/4"	18	40	A1HPFFS25X0.75MG	350
40/32mm	32.1	23	1"	20	50	A1HPFFS32X1MG	250
50/40mm	40.1	27	1 1/4"	22	59	A1HPFFS40X1.25MG	125
63/50mm	50.1	32	1 1/2"	25	70	A1HPFFS50X1.5MG	90
75/63mm	63.1	39	2"	28	85	A1HPFFS63X2MG	100
90/75mm	75.1	44	2 1/2"	31	90	A1HPFFS75X2.5MG	75
110/90mm	90.1	51	3"	34	104	A1HPFFS90X3MG	50
110mm	110.1	65	4"	40	130	A1HPFFS110X4MG	20

TITAN PLAST

Imperial (Inch) Size Class-E/PN-15 As per BSEN 1452-3

SIZE	d	L	E	H	CODE	PACKING
1/2"	21.3	17	26	22.5	A1HPFPC0.5IG	1600
3/4"	26.7	20	32	28	A1HPFPC0.75IG	1000
1"	33.5	23	39	32	A1HPFPC1IG	500
1 1/4"	42.2	27	50	39	A1HPFPC1.25IG	300
1 1/2"	48.2	32	58	44	A1HPFPC1.5IG	180
2"	60.3	39	73	56	A1HPFPC2IG	80
2 1/2"	75.1	44	90	65	A1HPFPC75MG	45
3"	88.8	51	106	73	A1HPFPC3IG	50
4"	114.2	65	130	88	A1HPFPC4IG	30
6"	168.2	90	190	123	A1HPFPC6IG	10



Metric Size PN-16 As per DIN 8063

SIZE	d	L	E	H	CODE	PACKING
20mm	20.1	17	26	22.5	A1HPFPC20MG	1600
25mm	25.1	20	32	28	A1HPFPC25MG	1000
32mm	32.1	23	39	32	A1HPFPC32MG	500
40mm	40.1	27	50	39	A1HPFPC40MG	300
50mm	50.1	32	58	44	A1HPFPC50MG	180
63mm	63.1	39	73	56	A1HPFPC63MG	80
75mm	75.1	44	90	65	A1HPFPC75MG	45
90mm	90.1	51	106	73	A1HPFPC90MG	50
110mm	110.1	65	130	88	A1HPFPC110MG	30
160mm	160.2	90	190	123	A1HPFPC160MG	10

TITAN PLAST

Imperial (Inch) Size Class-E/PN-15 As per BSEN 1452-3

SIZE	d	Z	L	E	CODE	PACKING
1/2"	21.3	17	11	27	A1HPFY0.5IG	400
3/4"	26.7	20	14	33	A1HPFY0.75IG	200
1"	33.5	23	17	42	A1HPFY1IG	100
1 1/4"	42.2	27	23	51	A1HPFY1.25IG	75
1 1/2"	48.2	32	26	63	A1HPFY1.5IG	60
2"	60.3	39	33	79	A1HPFY2IG	30



Metric Size PN-16 As per DIN 8063

SIZE	d	L	Z	E	CODE	PACKING
20mm	20.1	17	11	27	A1HPFY20MG	400
25mm	25.1	20	14	33	A1HPFY25MG	200
32mm	32.1	23	17	42	A1HPFY32MG	100
40mm	40.1	27	23	51	A1HPFY40MG	75
50mm	50.1	32	26	63	A1HPFY50MG	60
63mm	63.1	39	33	79	A1HPFY63MG	30

TITAN PLAST

Imperial (Inch) Size Class-E/PN-15 As per BSEN 1452-3

SIZE	d	L1	RP	E1	E2	CODE	PACKING
1/2"	21.3	17	1/2"	26	30	A1HPFFE0.5IG	500
3/4"	26.7	20	3/4"	32	35	A1HPFFE0.75IG	300
1"	33.5	23	1"	39	45	A1HPFFE1IG	180
1 1/4"	42.2	27	1 1/4"	50	55	A1HPFFE1.25IG	80
1 1/2"	48.2	32	1 1/2"	58	62	A1HPFFE1.5IG	50
2"	60.3	39	2"	73	75	A1HPFFE2IG	25
2 1/2"	75.1	44	2 1/2"	90	95	A1HPFFE75X2.5MG	45
3"	88.8	51	3"	106	110	A1HPFFE3IG	20



Metric Size PN-16 As per DIN 8063

SIZE	d	L1	RP	E1	E2	CODE	PACKING
20mm	20.1	17	1/2"	26	30	A1HPFFE20X0.5MG	500
25mm	25.1	20	3/4"	32	35	A1HPFFE25X0.75MG	300
32mm	32.1	23	1"	39	45	A1HPFFE32X1MG	180
40mm	40.1	27	1 1/4"	50	55	A1HPFFE40X1.25MG	60
50mm	50.1	32	1 1/2"	58	62	A1HPFFE50X1.5MG	50
63mm	63.1	39	2"	73	75	A1HPFFE63X2MG	25
75mm	75.1	44	2 1/2"	90	95	A1HPFFE75X2.5MG	45
90mm	90.1	51	3"	106	110	A1HPFFE90X3MG	20

TITAN PLAST

Imperial (Inch) Size Class-E/PN-15 As per BSEN 1452-3

SIZE	d	d1	L1	L2	CODE	PACKING
3/4x1/2"	26.7	21.3	20	17	A1HPFRT0.75X0.5IG	250
1x1/2"	33.5	21.3	23	17	A1HPFRT1X0.5IG	160
1x3/4"	33.5	26.7	23	20	A1HPFRT1X0.75IG	160
1 1/4x1/2"	42.2	21.3	27	17	A1HPFRT1.25X0.5IG	80
1 1/4x3/4"	42.2	26.7	27	20	A1HPFRT1.25X0.75IG	80
1 1/4x1"	42.2	33.5	27	23	A1HPFRT1.25X1IG	80
1 1/2x1/2"	48.2	21.3	32	17	A1HPFRT1.5X0.5IG	60
1 1/2x3/4"	48.2	26.7	32	20	A1HPFRT1.5X0.75IG	60
1 1/2x1"	48.2	33.5	32	23	A1HPFRT1.5X1IG	50
1 1/2x1 1/4"	48.2	42.2	32	27	A1HPFRT1.5X1.25IG	50
2x1/2"	60.3	21.3	39	17	A1HPFRT2X0.5IG	70
2x3/4"	60.3	26.7	39	20	A1HPFRT2X0.75IG	70
2x1"	60.3	33.5	39	23	A1HPFRT2X1IG	70
2x1 1/2"	60.3	48.2	39	32	A1HPFRT2X1.5IG	60



Metric Size PN-16 As per DIN 8063

SIZE	d	d1	L1	L2	CODE	PACKING
25 X 20	25.1	20.1	20	17	A1HPFRT25X20MG	250
32 X 20	32.1	20.1	23	17	A1HPFRT32X20MG	160
32 X25	32.1	25.1	23	20	A1HPFRT32X25MG	160
40x20	40.1	20.1	27	17	A1HPFRT40X20MG	80
40x25	40.1	25.1	27	20	A1HPFRT40X25MG	80
40x32	40.1	32.1	27	23	A1HPFRT40X32MG	80
50x20	50.1	20.1	32	17	A1HPFRT50X20MG	50
50x25	50.1	25.1	32	20	A1HPFRT50X25MG	50
50x32	50.1	32.1	32	23	A1HPFRT50X32MG	50
50x40	50.1	40.1	32	27	A1HPFRT50X40MG	50
63x20	63.1	20.1	39	17	A1HPFRT63X20MG	70
63x25	63.1	25.1	39	20	A1HPFRT63X25MG	70
63x32	63.1	32.1	39	23	A1HPFRT63X32MG	70
63x50	63.1	50.1	39	32	A1HPFRT63X50MG	70

TITAN PLAST

Class-E/PN-15 As per BSEN 1452-3

SIZE	d	L1	RP	E1	E2	CODE	PACKING
3/4x1/2"	26.7	20	1/2"	32	29	A1HPFRFT0.75X0.5IG	250
1x1/2"	33.5	23	1/2"	39	29	A1HPFRFT1X0.5IG	160
1x3/4"	33.5	23	3/4"	39	34	A1HPFRFT1X0.75IG	160
1 1/4x1/2"	42.2	27	1/2"	50	29	A1HPFRFT1.25X0.5IG	90
1 1/4x3/4"	42.2	27	3/4"	50	34	A1HPFRFT1.5X0.5IG	90
1 1/2x1/2"	48.2	32	1/2"	58	29	A1HPFRFT1.25X0.75IG	60
1 1/2x3/4"	48.2	32	3/4"	58	34	A1HPFRFT1.5X0.75IG	60
1 1/2x1"	48.2	32	1"	58	41	A1HPFRFT1.5X1IG	50
2x1/2"	60.3	39	1/2"	73	29	A1HPFRFT2X0.5IG	70
2x3/4"	60.3	39	3/4"	73	34	A1HPFRFT2X0.75IG	70
2x1"	60.3	39	1"	73	41	A1HPFRFT2X1IG	70



**Reducing
Female
Tee**

PN-16 As per DIN 8063

SIZE	d	L1	RP	E1	E2	CODE	PACKING
25x1/2"	25.1	20	1/2"	32	29	A1HPFRFT25X0.5MG	250
32x1/2"	32.1	23	1/2"	39	29	A1HPFRFT32X0.5MG	160
32x3/4"	32.1	23	3/4"	39	34	A1HPFRFT32X0.75MG	160
40x1/2"	40.1	27	1/2"	50	29	A1HPFRFT40X0.5MG	90
40x3/4"	40.1	27	3/4"	50	34	A1HPFRFT40X0.75MG	90
50x1/2"	50.1	32	1/2"	58	34	A1HPFRFT40X0.5MG	60
50x3/4"	50.1	32	3/4"	58	34	A1HPFRFT50X0.75MG	60
50x1"	50.1	32	1"	58	41	A1HPFRFT50X1MG	50
63x1/2"	63.1	39	1/2"	73	29	A1HPFRFT63X0.5MG	70
63x3/4"	63.1	39	3/4"	73	34	A1HPFRFT63X0.75MG	70
63x1"	63.1	39	1"	73	41	A1HPFRFT63X1MG	70

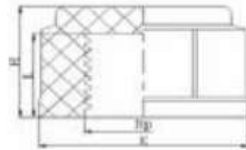
TITAN PLAST

Class-E/PN-15 As per BSEN 1452-3

SIZE	L	Rp	H	E	CODE	PACKING
1/2"	17	1/2"	37	37	A1HPFTC0.5IG	850
3/4"	18	3/4"	42	42	A1HPFTC0.75IG	600
1"	20	1"	50	50	A1HPFTC1IG	350
1 1/4"	22	1 1/4"	59	59	A1HPFTC1.25IG	250
1 1/2"	25	1 1/2"	65	65	A1HPFTC1.5IG	180
2"	28	2"	77	77	A1HPFTC2IG	110
2 1/2"	31	2 1/2"	90	90	A1HPFTC2.5IG	100
3"	34	3"	105	105	A1HPFTC3IG	50
4"	40	4"	130	130	A1HPFTC4IG	20



**Female
Threaded
Cap**

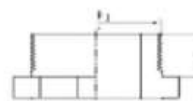


Class-E/PN-15 As per BSEN 1452-3

SIZE	L	Rp	CODE	PACKING
1/2"	17	1/2"	A1HPFMT0.5IG	1500
3/4"	19	3/4"	A1HPFMT0.75IG	1000
1"	22	1"	A1HPFMT1IG	500
1 1/4"	24	1 1/4"	A1HPFMT1.25IG	400
1 1/2"	25	1 1/2"	A1HPFMT1.5IG	250
2"	29	2"	A1HPFMT2IG	150



**Male
Threaded
Plug**



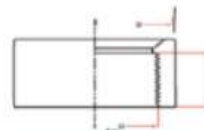
TITAN PLAST

Class-E/PN-15 As per BSEN 1452-3

SIZE	L	D	Rp	CODE	PACKING
3/4x1/2"	20	26.6	1/2"	KHPFFRB0.75X0.5IG	1200
1x1/2"	23	33.5	1/2"	KHPFFRB1X0.5IG	700
1x3/4"	23	33.5	3/4"	KHPFFRB1X0.75IG	700
1 1/2x1/2"	32	48.2	1/2"	KHPFFRB1.5X0.5IG	200
1 1/2X3/4"	32	48.2	3/4"	KHPFFRB1.5X0.75IG	200
2x1/2"	39	60.3	1/2"	KHPFFRB2X0.5IG	150
2X3/4"	39	60.3	3/4"	KHPFFRB2X0.75IG	150



Female Reducer Bush



PN-16 As per DIN 8063

SIZE	L	D	Rp	CODE	PACKING
25x1/2"	20	25	1/2"	KHPFFRB25X0.5MG	1200
32x1/2"	23	32	1/2"	KHPFFRB32X0.5MG	700
32x3/4"	23	32	3/4"	KHPFFRB32X0.75MG	700
50X1/2"	32	50	1/2"	KHPFFRB50X0.5MG	200
50X3/4"	32	50	1/2"	KHPFFRB50X0.75MG	200
63X1/2"	39	63	1/2"	KHPFFRB63X0.5MG	150
63X3/4"	39	63	3/4"	KHPFFRB63X0.75MG	150

PN-16 As per DIN 8063

SIZE	L	Rp	CODE	PACKING
1/2"	17	1/2"	PFHN0.5IG	1000
3/4"	19	3/4"	A1HPFHN0.75IG	700
1"	22	1"	A1HPFHN1IG	400
1 1/4"	24	1 1/4"	A1HPFHN1.25IG	250
1 1/2"	25	1 1/2"	A1HPFHN1.5IG	150
2"	29	2"	A1HPFHN2IG	100



Hex Nipple



TITAN PLAST

Imperial (Inch) Size Class-E/PN-15 As per BSEN 1452-3

SIZE	d	Z	L	D	CODE	PACKING
1/2"	21.3	17	11	26	A1HPFCT0.5IG	300
3/4"	26.7	20	14	32	A1HPFCCT0.75IG	200
1"	33.5	23	17	39	A1HPFCT1IG	150
1 1/4"	42.2	27	23	50	A1HPFCT1.25IG	100
1 1/2"	48.2	32	26	58	A1HPFCT1.5IG	75
2"	60.3	39	33	73	A1HPFCT2IG	30
3"	88.8	51	47	106	A1HPFCT3IG	10
4"	114.2	65	57	130	A1HPFCT4IG	5
6"	168.2	90	82	198	A1HPFCT6IG	2



Metric Size PN-16 As per DIN 8063

SIZE	d	L	Z	D	CODE	PACKING
20mm	20.1	17	11	26	A1HPFCT20MG	300
25mm	25.1	20	14	32	A1HPFCT25MG	200
32mm	32.1	23	17	39	A1HPFCT32MG	150
40mm	40.1	27	23	50	A1HPFCT40MG	100
50mm	50.1	32	26	58	A1HPFCT50MG	75
63mm	63.1	39	33	73	A1HPFCT63MG	30
75mm	75.1	44	39	90	A1HPFCT75MG	20
90mm	90.1	51	47	106	A1HPFCT90MG	10
110mm	110.1	65	57	130	A1HPFCT110MG	5
160mm	160.2	90	82	185	A1HPFCT160MG	2

TITAN PLAST

Class-E/PN-15 As per BSEN 1452-3

SIZE	d	L	CODE	PACKING
1 1/2"	48.2	32	A1HPFFL1.5IG	50
2"	60.3	39	A1HPFFL2IG	30
2 1/2"	75.1	44	A1HPFFL75MG	25
3"	88.8	51	A1HPFFL3IG	20
4"	114.2	64	A1HPFFL4IG	10
6"	168.2	90	A1HPFFL6IG	5



PN-16 As per DIN 8063

SIZE	d	L	CODE	PACKING
50mm	50.1	32	A1HPFFL50MG	50
63mm	63.1	39	A1HPFFL63MG	30
75mm	75.1	44	A1HPFFL75MG	25
90mm	90.1	51	A1HPFFL90MG	20
110mm	110.1	65	A1HPFFL110MG	10
160mm	160.2	90	A1HPFFL160MG	5

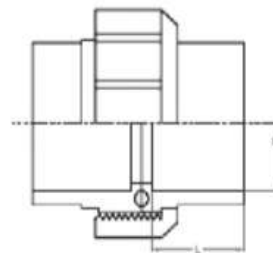
TITAN PLAST

Class-E/PN-15 As per BSEN 1452-3

SIZE	d	L	CODE	PACKING
1/2"	21.3	17	A1HPFUN0.5IG	800
3/4"	26.7	20	A1HPFUN0.75IG	500
1"	33.5	23	A1HPFUN1IG	300
1 1/4"	42.2	27	A1HPFUN1.25IG	200
1 1/2"	48.2	32	A1HPFUN1.5IG	100
2"	60.3	39	A1HPFUN2IG	50
2 1/2"	75.1	44	A1HPFUN75MG	30
3"	88.8	51	A1HPFUN3IG	20
4"	114.2	64	A1HPFUN4IG	10



**Union
Solvent
Socketed**



PN-16 As per DIN 8063

SIZE	d	L	CODE	PACKING
20mm	20.1	17	A1HPFUN20MG	800
25mm	25.1	20	A1HPFUN25MG	500
32mm	32.1	23	A1HPFUN32MG	300
40mm	40.1	27	A1HPFUN40MG	200
50mm	50.1	32	A1HPFUN50MG	100
63mm	63.1	39	A1HPFUN63MG	50
75mm	75.1	44	A1HPFUN75MG	30
90mm	90.1	51	A1HPFUN90MG	20
110mm	110.1	65	A1HPFUN110MG	10

TITAN PLAST

PN-16 As per DIN 8063

SIZE	d	d1	L1	L2	Z	CODE	PACKING
25 X 20	20.1	25	20	17	3	A1HPFRB25X20MG	2000
32 X 20	20.1	32	23	17	6	A1HPFRB32X20MG	900
32 X 25	25.1	32	23	20	3	A1HPFRB32X25MG	900
40 X 20	20.1	40	27	17	10	A1HPFRB40X20MG	500
40 X 25	25.1	40	27	20	7	A1HPFRB40X25MG	500
40 X 32	32.1	40	27	23	4	A1HPFRB40X32MG	500
50 X 20	20.1	50	32	17	15	A1HPFRB50X20MG	330
50 X 25	25.1	50	32	20	12	A1HPFRB50X25MG	330
50 X 32	32.1	50	32	23	9	A1HPFRB50X32MG	330
50 x 40	40.1	50	32	27	5	A1HPFRB50X40MG	330
63 X 20	20.1	63	39	17	22	A1HPFRB63X20MG	160
63 X 25	25.1	63	39	20	19	A1HPFRB63X25MG	160
63 X 32	32.1	63	39	23	16	A1HPFRB63X32MG	160
63x40	40.1	63	39	27	12	A1HPFRB63X40MG	160
63 x 50	50.1	63	39	32	7	A1HPFRB63X50MG	160
75X50	50.1	75	44	32	12	A1HPFRB75X50MG	90
75X63	63.1	75	44	39	5	A1HPFRB75X63MG	90
90X50	63.1	90	51	39	12	A1HPFRB90X63MG	60
90x63	63.1	90	51	39	12	A1HPFRB90X63MG	60
90X75	75.1	90	51	44	7	A1HPFRB90X75MG	60
110X50	50.1	110	65	32	33	A1HPFRB110X50MG	30
110x63	63.1	110	65	39	26	A1HPFRB110X63MG	30
110x75	75.1	110	65	45	20	A1HPFRB110X75MG	30
110x90	90.1	110	65	51	14	A1HPFRB110X90MG	30
160x90	90.1	160	90	51	39	A1HPFRB160X90MG	20
160x110	110.1	160	90	65	25	A1HPFRB160X110MG	20

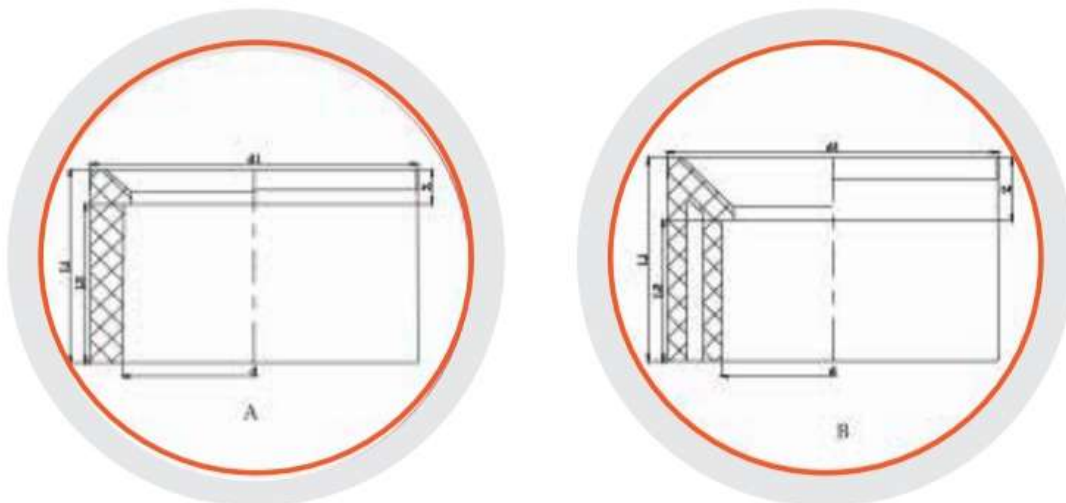


Reducer Bushes

TITAN PLAST

CLASS-E/PN-15 As per BSEN 1452-3

SIZE	d	d1	L1	L2	Z	CODE	PACKING
3/4 X 1/2"	21.3	26.6	2	17	3	A1HPFRB0.75X0.5IG	2000
1 X 1/2"	21.3	33.4	23	17	6	A1HPFRB1X0.5IG	1000
1 X 3/4"	26.7	33.4	23	20	3	A1HPFRB1X0.75X0.5IG	1000
1 1/4 X 3/4"	21.3	42.1	27	17	10	A1HPFRB1.25X0.5IG	550
1 1/4 X 3/4"	26.7	42.1	27	20	7	A1HPFRB1.25X0.75IG	550
1 1/4 X 1"	33.5	42.1	27	23	4	A1HPFRB1.25X1IG	550
1 1/2 X 1/2"	21.3	48.1	32	17	15	A1HPFRB1.5X0.5IG	340
1 1/2 X 3/4"	26.7	48.1	32	20	12	A1HPFRB1.5X0.75IG	340
1 1/2 X 1"	33.5	48.1	32	23	9	A1HPFRB1.5X1IG	340
1 1/2 X 1 1/4"	42.2	48.1	32	27	5	A1HPFRB1.5X1.25IG	340
2 X 1/2"	21.3	60.2	39	17	22	A1HPFRB2X0.5IG	160
2 X 3/4"	26.7	60.2	39	20	19	A1HPFRB2X0.75IG	160
2 X 1"	33.5	60.2	39	23	16	A1HPFRB2X1IG	160
2 X 1 1/4"	42.2	60.2	39	27	12	A1HPFRB2X1.25IG	160
2 X 1 1/2"	48.2	60.2	39	32	7	A1HPFRB2X1.5IG	160
2 1/2 X 1 1/2"	48.2	75	4	3	12	A1HPFRB2.5X1.5IG	200
2 1/2 X 2"	60.3	75	44	39	5	A1HPFRB2.5X2IG	200
3 X 1 1/2"	48.2	88.7	51	32	19	A1HPFRB3X1.5IG	150
3 X 2"	60.3	88.7	51	39	12	A1HPFRB3X2IG	150
3 X 2 1/2"	60.3	88.7	51	39	12	A1HPFRB3X2.5IG	150
4 X 1 1/2"	48.2	114.1	65	32	33	A1HPFRB4X1.5IG	75
4 X 2"	60.3	114.1	65	39	26	A1HPFRB4X2IG	75
4 X 3"	88.8	114.1	65	51	14	A1HPFRB4X3IG	75
6 X 3"	88.8	168	65	51	39	A1HPFRB6X3IG	20
6 X 4"	114.2	168	90	65	25	A1HPFRB6X4IG	20



Reducer Bushes

uPVC Pipes Drain, Waste Soil & Ventilation

TITAN PLAST

BS EN 1329

Nominal Size	Nominal out Diameter	Wall Thickness Application Area			
		B		BD	
DN/OD	d_n	$e_{min.}$	$e_{m,max.}$	$e_{min.}$	$e_{m,max.}$
32	32	3,0	3,5	-	-
40	40	3,0	3,5	-	-
50	50	3,0	3,5	-	-
63	63	3,0	3,5	-	-
75	75	3,0	3,5	3,0	3,5
80	80	3,0	3,5	3,0	3,5
82	82	3,0	3,5	3,0	3,5
90	90	3,0	3,5	3,0	3,5
100	100	3,0	3,5	3,0	3,5
110	110	3,2	3,8	3,2	3,8
125	125	3,2	3,8	3,2	3,8
140	140	3,2	3,8	3,5	4,1
160	160	3,2	3,8	4,0	4,6
180	180	3,6	4,2	4,4	5,0
200	200	3,9	4,5	4,9	5,6
250	250	4,9	5,6	6,2	7,1
315	315	6,2	7,1	7,7	8,7

BS 5255 / BSEN 1455-1

Nominal Size		Mean Outside Diameter (mm)		Wall Thickness (mm) THERMOPLASTIC WASTE PIPE	
Inch	DN	MIN.	MAX.	MIN.	MAX.
1¼	32	36.15	36.45	1.8	2.2
1½	40	42.75	43.05	1.9	2.3
2	50	55.75	56.05	2.0	2.4

Note: Can be manufactured on customer's request out of PVC-Mu.

TITAN PLAST

BS 4514

Nominal Size		Mean Outside Diameter (mm)		Wall Thickness (mm) DISCHARGE SYSTEM FOR INSIDE BLDG.	
Inch	DN	MIN.	MAX.	MIN.	MAX.
3	82	82.4	82.8	3.2	3.8
4	110	110.0	110.4	3.2	3.8
6	160	160.0	160.6	3.2	3.8

ASTM D2665

Nominal Size Inch		Outside Diameter (mm)		Wall Thickness (mm) DISCHARGE SYSTEM FOR INSIDE BLDG.	
Inch	DIN	MIN.	MAX.	MIN.	MAX.
1¼	36	42.03	42.29	3.56	4.07
1½	43	48.11	48.41	3.68	4.19
2	56	60.17	60.17	3.91	4.42
3	82	88.70	88.70	5.49	6.15
4	110	114.07	114.07	6.02	6.73
6	160	160.0	160.6	3.2	3.8
8	200	200.0	200.5	3.9	4.5

Under Ground Sewerage Application

TITAN PLAST

BSEN 1401

Nominal Size	Nominal outside Diameter	SN 2 SDR 512)		SN 4 SDR 41		SN 8 SDR 34	
		$e_{min.}$	$e_{m,max.}$	$e_{min.}$	$e_{m,max.}$	$e_{min.}$	$e_{m,max.}$
DN/OD ¹	d_n						
110	110	-	-	3,2	3,8	3,2	3,8
125	125	-	-	3,2	3,8	3,7	4,3
160	160	3,2	3,8	4,0	4,6	4,7	5,4
200	200	3,9	4,5	4,9	5,6	5,9	6,7
250	250	4,9	5,6	6,2	7,1	7,3	8,3
315	315	6,2	7,1	7,7	8,7	9,2	10,4
(355)	355	7,0	7,9	8,7	9,8	10,4	11,7
400	400	7,9	8,9	9,8	11,0	11,7	13,1
(450)	450	8,8	9,9	11,0	12,3	13,2	14,8
500	500	9,8	11,0	12,3	13,8	14,6	16,3

1. Non-preferred sized are indicated in parenthesis.
2. SDR 51 is applicable for application area code "U" only.

Note: "U" Inside the building.
"D" Inside building Buried within the building structure.

BS 4660 & 5481

Nominal Size		Mean Outside Diameter (mm)		Wall Thickness (mm)			
				BS 4660		BS 5481	
Inch	mm	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
4	110	110.0	110.4	3.2	3.8		
6	160	160.0	160.6	4.1	4.8		
8	200	200.0	200.6			4.9	5.6
10	250	250.0	250.7			6.1	7.0
12	315	315.0	315.9			7.7	8.7
14	355	355.0	356.0			8.7	9.7
16	400	400.0	401.0			9.8	11.0
18	450	450.0	451.0			11.0	12.2
20	500	500.0	501.0			12.2	13.7

- Standard Length : 4, 5 & 6 meters
Colour : Golden brown
Socket Type : Solvent Weld and Rubber seat ring

TITAN PLAST

FLOOR TRAP 70MM SEAL WITH REMOVABLE SEPERATOR

SIZE	D	d	d1	L	CODE	PACKING
110X82X43mm	110	82	43	170	KDF110X82X43F1	18
110x82x56mm	110	82	56	170	KDF110X82X56F1	18



P TRAP

SIZE	D	L	CODE	PACKING
110mm/4"	110	90	KDF110PT	10

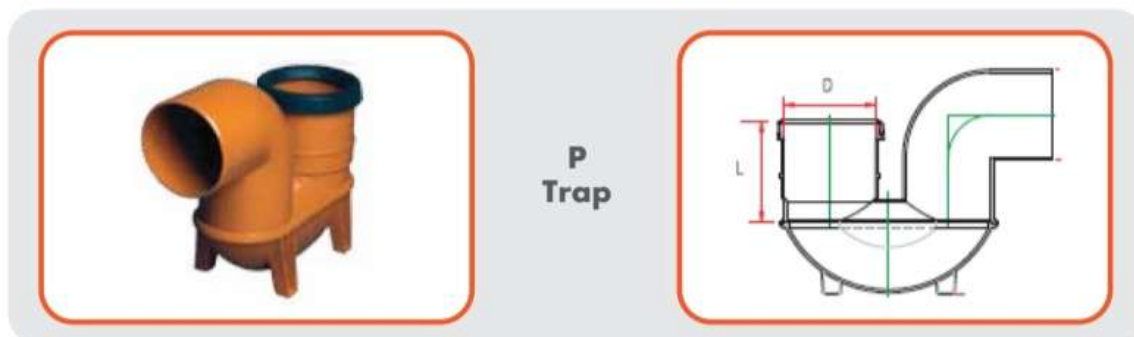


Table of Chemical Resistance uPVC

INTRODUCTION

The resistance of plastic pipes material to a wide range of chemicals is listed in the following tables (RE. CP 312:PART1: 1993).

The chemical names used in the tables are wherever possible in accordance with the recommendations contained in BS 2474; other chemicals names commonly used are frequently included as well with a cross-reference to the preferred name, the symbols used in the tables are as follows :

S-Satisfactory

U-Unsatisfactory, So rated because of decomposition, solution swelling, loss of ductility, etc. of the samples tested.

D-Some attack or absorption. The Material may be considered for use when alternative material are unsatisfactory, and where limited life is acceptable.

When plastics to be used with such chemicals, full scale trial under realistic conditions are particularly necessary.

* - Predicted results. In order to cover as wide range of named chemicals as possible, the resistance of plastics to some chemicals has been predicted from its resistance to other chemicals which have similar composition.

+ Reference should be made to Section 21 (pipes for food and drink other than water) of BS CP 312

Chemical	Concentration	Temperature	
		20°	60°C
Acetaldehyde	40% (w/v) soin. 100%.	S	U*
Acetic acid	10% (w/v) soin. 60% (w/v) Glacial	U	U
Acetic anhydride		S	S
Acetone		S	D
Acetonitrile		U	U
Acetophenetidine		U	U
Acetophenone		U	U
Adipic acid		S*	S*
Alcohols, see specific alcohols		U*	U*
Aliphatic hydrocarbons		S	D
Allyl alcohol		S	S
Allyl Chloride		S*	S*
Alum, see , aluminium potassium sulphate		S	S
Aluminium acetate		S	S
Aluminium choride		S*	S*
Alurninium fluoride		S*	S*
Aluminium hydroxide		S	S
Aluminium nitrate		S*	S*
Aluminium oxalate		S	S
Aluminium oxychloride		S*	S*
Alurninium potassium Sulphate (atum)		S	S
Aluminium sulphate		S	S
Ammonia	Dry gas Liquid	S	S
Ammonia solution (ammonium hydroxide)	35%(m/v)soin.	S	S
Ammonium bicarbonate See ammoniu hydrogen carbonate	(0-88 g/m)	U	U*
Ammonium carbonate		S	S
Ammonium chloride		S	S
Ammonium ferrous citrate		S*	S*
Ammonium fluoride		S	S
Ammonium hydrogen Carbonate		S*	S*
Ammonium hydroxide See ammonia solution		S	S
Arnmoniurn metaphosphate		S	S
Amrnonium nitrate		S	S
Ammonium orthophosphate		S*	S*
Ammonium oxalate		S*	S*
Ammonium persulphate		S	S
Ammonium sulphate		S	S
Ammonium sulphide		S	S
Ammonium thiocryiate		S	S
Ammonium zinc chloride (zinc, ammonium chloride)		S*	S*
Amyl acetate		U	U
Amyl alcuhol		U	U
Amyl chloride		U	U
Aniline		U	U
Aniline hydrochloride		U	U
Anilinc sulphate		S*	S*
Animal oil+		S	U
Antraquinone		S	U
Antraquinonesulphonic, acid		S	S*
Antinomny chloride		U	U
Aqua regia**	conc.	U	U
Aromatic hydrocarbons		S	D
Arsenic : acid (syrupy)	75%(m/m) or 2g/ml	S	U
Aryl sulphonic acid		S	U
Barium carbonate		S*	S*
Barium chloride		S*	S*
Barium hydroxide		S	S
Barium sulphate		S*	S*
Barium sulphide		S	S
Beer+		S	S
Benzaldehyde	Trace 100%.	U	S
Benzene		U	U
Benzonic acid		U	U
Benzoyl chloride		D	U
Benzyl acetate		U*	U
		U	U*

TITAN PLAST

Chemical	Concentration	Temperature		Chemical	Concentration	Temperature	
		20°	60°C			20°	60°C
Benzyl alcohol (phenylcarbinol)		U*	U*	Dextrose +	sat.soln.	U*	S
Bismuth carbonate		S	U*	Diamyl ether		S	U*
Borax, see disodium Tetraborate				Diazo salts		U*	U*
Boric acid		S	S	Dibromoethane (ethylene dibromide)		U*	U*
Boron trifluoride		S	S	Dibutyl phthalate		U*	U
Brine		S	S	Dichlorobenzene		S	U*
Bromine	Trace	S	U	Dichlorodifluoromethane		U	U
	100% dry gas	U*	U	Dichloroethane (ethylene dichloride)		U*	U
	Liquid	U	U	Dichloroethylene			
Bromomethane (methylbromide)		U*	U*	1, 2-dichloropropane (propylene		U	U*
Butadiene		S	S	dichloride)		U	U
Butane		S	S	Diethyl ether		U*	S*
Butanediols		U	U	Diethyl ketone		U	U
Butanols (butyl alcohols)		S	D	Diethyl sulphate (ethyl sulphate)		S*	S
Butyl acetate		U	U	Digol (diethylene glycol)		S	U*
Butyl chloride		U*	U*	Dimethylsulphate (methyl sulphate)		S	U*
IsoButyl methyl ketone (4-methylpen-		U*	U*	Dimethylamine		U*	U
tan-2-one)		U	U	Dimethylcarbinol, see Isopropyl alcohol		U*	S
Butylphenols		U*	U*	Dicotyl phthalate		U	S*
Butyraldehyde		S	U*	Dioxan		S	S*
Butyric acid	20% aq.soln.	U	U	Diphenyl ether			
	Conc.	S	S	Disodium phosphate, see disodium			
Calcium carbonate		S	S	hydrogen orthophosphate dodecanoic		S*	S
Calcium chlorate		S	S	acid (lauric)		S*	S*
Calcium chloride	aq.soln.	S*	S*	Dodecanol (lauryl alcohol)		S	S
Calcium hydrogen sulphite (calcium		S	S	Emulsifiers	All	S	D
bisulphite)		S	S	Emulsions (photographic)		S	D
Calcium hydroxide		S	S	Ethane	95 - 100%	S	U
Calcium hypochlorite		S*	S*	Ethanedoil (ethylene glycol)	40% (w/v)		
Calcium nitrate		S	S	Ethanol (ethyl alcohol) +	aq.soln.		
Calcium orthophosphates		S	S			U	U
Calcium sulphate		S	S	Ethers (see also diethyl ether)		U	U
Calcium sulphide				Ethyl acetate			
Carbon dioxide (gas)	U	S	S	Ethyl acrylate		U*	U*
Carbon disulphide		D	U	Ethyl alcohol, see ethanol ethyl butyrate			
Carbon monoxide		S*	S*	Ethyl Chloride, see chloroethane		U*	U*
Carbon tetrachloride		S	S	Ethyl formate		U*	U*
Casien				Ethyl lactate			
Castor Oil+		S	S	Ethyl methyl ketone (methyl ethyl		U	U
Cetyl alcohol, see hexadecanol		S	S**	ketone)			
Chloral hydrate		D	U	Ethyl sulphate, see diethyl sulphate			
Chloric acid		D	U	Ethylene chlorohydrin, see 2-chloroeth-			
Chlorine gas	10% dry	U	U	anol			
	100%dry	D	U*	Ethylene dibromide, see dichloroethane			
	10% moist	U*	U*	Ethylene dichloride, see dichloroethane			
	sat. Aq. soin.	S	D	Ethylene glycol, see ethanedoil		U	U
Chlorine		U	U	Ethylene oxide (oxiran)			
Chlorine trifluoride						S	S
Chloroacetic acid				Fatty Acids, higher		S	S
Chlorobenzene		U	U	Ferric Chloride		S	S
Chloroethane (ethyl chloride)				Ferric nitrate		S	S
2-chloroethanol (ethylene chlorohydrin)		U	U	Ferric sulphate			
Chloroform		U	U	Ferrous ammonium citrate, see		S*	S*
Chloromethane (methyl chloride)		U	U	ammonium ferrous citrate		S*	S*
Chlorosulphonic acid		D	U	Ferrous chloride		S	S
Chromic acid	plating soln.	S	S	Ferrous sulphate		U	U
Chromic potassium sulphate (chromo		S	S	Fixing soin. (photographic)		S	S
alum)		S*	S	Fluorine		S	S
Cider-+		S	S*	Fluorosilic acid			
Citric, acid +		S*	S*		40% aq.soln.	S	S
Copper** chloride		S*	S		conc.	S	S
Copper** cyanide		S	S*	Formaldehyde	40% (w/v) aq.soln.		
Copper** fluoride		S*	S	Formic acid	3% aq.soln.		
Copper** nitrate		S	U		10% aq.soln.		
Copper ** sulphate		U	U		25% aq.soln.		
Cresote		U	U*		50% aq.soln.	S	S
Cresols		U	U		98% - 100%	S	D
Cresylic acid		U	U	Fructose+		S	U
Crotonaldehyde		U	U	Fruit juices+		U	U
Cyclohexanol		U	S*	Fuel oil			
Cyclohexanone		S	S	Fufuraldehyde (fuffural)	100%.	S	S
Detergent (synthetic) diluted for use		S	S	Furfuryl alcohol		S	S
Developers (photographic)		S	S				
Dextrin		S	U*				

TITAN PLAST

Table of Chemical Resistance uPVC

Chemical	Concentration	Temperature		Chemical	Concentration	Temperature	
		20°	60°C			20°	60°C
Gallic acid, see 3, 4, 5 -trihydroxybenzoic acid		S	S	Methyl acetate		S	S*
Gasoline, see petrol		U	U	Methyl bromide, see bromomethane		U*	U*
Glucose+		U*	U	Methyl isobutyl ketone, see isobutyl methyl ketone			
Glycerol				Methyl chloride, see chloromethane			
Glycerol monobenzyl ether		S	S	Methyl ethyl ketone, see ethyl methyl ketone			
Glycol see ethanedioil	30% alc. soin	S	S	Methyl glycol	50%(w/v) aq. soln.	S	S
Glycollic acid		U*	U*		60%(w/v) aq. soln.	S	S
Grape sugar+					75%(w/v) aq. soln.	S	S
Heptane		S	S		90%(w/v) aq. soln.	S	S
Hexadecanol (cetyl alcohol)		S	S	Methyl hydrogen sulphate (methyl sulphuric acid)		U	U
Hexanol (hexyl alcohol)		S	U	Methyl methacrylate		S*	S*
Hydrobromic acid	50%(w/v)aq. soln	S*	S*	Methyl sulphate, see dimethyl sulphate		S	S*
	100%(w/v)aq. soln	S	S	Methylated spirits		S	S*
Hydrochloric acid	10%(w/v)aq. soln	S	S	Methylcyclohexanone		U	U
	22%(w/v)aq. soln	S*	S*	Methylsulphonic acid			
	Conc.(36%)	S	S	Milk+		S	S
Hydrocyanic acid	10%(w/v)aq. soln	S	S	Mineral oils		S	S
Hydrofluoric acid	4%(w/v)aq. soln	S	S	Mixed acids**		S	S
	40%(w/v)aq. soln	S	S	Molasses+		S	S
	60%(w/v)aq. soln	S	S	Monochlorobenzene		S	S
	concentrated	S	U	Naphtha		S	S
Hydrogen		D	U*	Naphthalene		S	S
Hydrogen bromide	Anhydrous	U*	U*	Nickel chloride		S	S
Hydrogen chloride	Anhydrous	S	S	Nickel nitrate		S	S
Hydrogen fluoride	Anhydrous	S*	S*	Nickel sulphate		S	S
Hydrogen peroxide	3%(w/v) aq. soln.	S*	S*	Nicotine		S	S
	12%(w/v) aq. soln.	S*	S*	Nictonic acid		S	S
	30%(w/v) aq. soln.	S	S	Nitric acid	5% (w/v) aq. soln.		
	90%(w/v) or greater				10%(w/v) aq. soln.	U*	U*
					25%(w/v) aq. soln.		
Hydrogen sulphate					50%(w/v) aq. soln.	S*	S*
Hydroquinone, see quinol hydro-xylammonium sulphate					70%(w/v) aq. soln.		
Hypochlorous acid					98%(w/v) aq. soln.		
Iodine	soln.in potassium iodide	U	U	Nitrobenzene			
	S	U		Nitropropane		S	S
Iso-octane (2,2,4-trimethylpentane)	U	U		Nitrous fumes	moist	S	S
Isophorone				Nonanol (nonyl alcohol)		S	S
Isopropanol, see isopropyl alcohol				Octane		S	S
Lactic acid	10%(w/v) aq.soln.	S	S	Octanol (octyl alcohol)		S	S
	100%(w/v) aq.soln.	U	U	Oils and fats+		S	S
Lanolin		S*	S*	Oleic acid		S	S
Latex		S	S	Orthophosphoric acid	20% aq. soln.	S*	S*
Lauric acid, see dodecanoic acid					30% aq. soln.	S	S
Lauryl alcohol, see dodecanol					50% aq. soln.	S	S
Lead acetate		S	S		95% aq. soln.	S	S
Lead arsenate		S*	S*	Oxalic acid		S	S
Lead nitrate		S*	S*	Oxygen		S	S
Lead tetraethyl, see tetraethyl lead				Ozone		S	S
Linoleic acid		S	S	Palmitic acid	10%.	S*	S*
Linseed oil		S	S		70%.	S*	S*
Lubricating oil		S	S	Paraffin		S	S
Magnesium carbonate		S	S	Paraffin wax		S	S
Magnesium chloride		S	S	Pentane		S*	S*
Magnesium hydroxide		S	S	Perchloric acid	10%.	S	S
Magnesium nitrate	25%(w/v)aq.soln	S	S	Petrol		S	S
Maleic acid	50%(w/v)aq.soln	S	S	Petro/benzene		S*	S*
	concentrated	S	S	Mixture	80 : 20 ratio	S	S
		S	S	petroleum spirit (petroleum ether)		S	S
Malic acid		S	S	Phenol		S	S
Manganese sulphate		S*	S*	Phenylcarbinol, see benzyl alcohol		S	S
Margarine+		S	S	Phenylhydrazine		S	S
Mercuric chloride		S	S	Phenylhydrazine hydro-chloride		S*	S*
Mercuric cyanide		S	S	Phosgene	gas liquid		
Mercurous nitrate		S	S	Phosphates(see also under ammonium, potassium, sodium etc.)			
Mercury		S	S	Phosphine			
Mesityl oxide		U	U	Phosphoric acid, see orthophosphoric acid			
Metallic soaps (water soluble)	100% .	S*	S*	Phosphorus			
Methanol (methyl alcohol)	60%(w/v)aq.soln.	S	D	Phosphorus pentoxide			
				Phosphorus trichloride			

TITAN PLAST

Chemical	Concentration	Temperature	
		20°	60°C
Potassium thiosulphate		S*	S*
Propane		S	S
Propane-1, 2-diol (propylene glycol)		S*	S*
Propargyl alcohol (prop-2-yn-1-ol)		S	S
Propionic acid	50% aq.soln	S*	S*
	100% aq.soln	S*	U*
Iso propyl alcohol (isopropanol)		S	S
Propylene dichloride, see 1, 2-dichloro-			
propane		U*	U*
Propylene oxide		U	U
Pyridine		S*	S*
Quinot (hydroquinone)		S*	S*
Rayon coagulating bath		S*	S*
Sulphur trioxide		S	S
Salicylic acid		S	S
Seawater		U	U
Selenic acid		S*	S*
Shortening		S	S
Silicic acid		S*	S*
Silver acetate		S	S
Silver cyanide		S	S
Silver nitrate		S	S
Soap solutions (aqueous)		S	S
Sodium acetate			
Sodium acid sulphate, see sodium			
hydrogen sulphate		S*	S*
Sodium aluminate		S*	S*
Sodium antimonate		S	D
Sodium benzoate			
Sodium bicarbonate, see sodium			
hydrogen carbonate			
Sodium bisulphate, see sodium			
hydrogen sulphate			
Sodium bisulphite, see sodium			
hydrogen sulphite			
Sodium borate, see disodium tetrabo-			
rate		S	S
Sodium bromide		S	S
Sodium carbonate		S	S
Sodium chlorate	1% (w/v) aq. soin.	S*	S*
Sodium chloride	10% (w/v) aq.	S	S
Sodium cyanide	soin.	S	S
Sodium ferricyanide	40% (w/v) aq.	S	S
Sodium ferrocyanide	soin.		
Sodium fluoride	Conc.	S	S
Sodium hydrogen carbonate(sodium	15% available	S*	S*
bicarbonate)	chlorine		
Disodium hydrogen orthophosphate		S	S
Sodium hydrogen sulphate(sodium			
bisulphate)		S	S
Sodium hydrogen sulphite(sodium			
bisulphate)		S	S
Sodium hydroxide			
Sulphur hypochlorite		S*	S*
Sodium hyposulphite, see sodium			
thiosulphate.		S	S
Sodium metaphosphate		S*	S*
Sodium nitrate		S*	S*
Sodium nitrite		S*	S*
Trisodium orthophosphate		S	S
Sodium perborate			
Sodium peroxide			
Sodium silicate			
Sodium sulphate		S	S
Sodium sulphide	aq.soln	S	S
Disodium tetraborate(borax)		S	S
Sodium thiosulphate (sodium hyposul-			
phite)		S*	S*
Soft soap		S*	S*
Stannic chloride		S	S
Stannous chloride		S	S
Starch		S	S

Chemical	Concentration	Temperature	
		20°	60°C
Stearic acid		S	S
Sucrose +	colloidal	S*	S*
Sulphur		S	S
	dry		
	moist	S	S
	liquid		
Sulphur dioxide			
		S	S
Sulphur trioxide	10% (w/v) aq.	S	U
Sulphuric acid	soin.	D	U
	20% (w/v) aq.	S	S
	soin.	S	S
	30% (w/v) aq.	S	S
	soin.	S	S
	40% (w/v) aq.	S	S
	soin.	S	S
	50% (w/v) aq.	S	S
	soin.	S	S
	55% (w/v) aq.	S	S
	soin.	D	D
	60% (w/v) aq.	D	U
	soin.	U	U
Sulphurous acid	70% (w/v) aq.	U*	U*
	soin.	S	S
Surface active agents	80% (w/v) aq.	S	S
Tallow	soin.	S*	S*
Tannic acid	90% (w/v) aq.	S*	S*
Tanning extracts	soin.	S	S
Tartaric acid +			
Tetrathyl lead(lead tetrathyl)	95% (w/v) aq.	S	S*
Tetrahydrofuran	soin.	S	S
Tetrahydronaphthalene(tetralin)	98% (w/v) aq.	S	S
Thionyl chloride	soin.	U	U
Titanium trichloride	Fluming	U	U
Toluene	10% (w/v) aq.	U	U
Transformer oil	soin.	U	U
Tributyl phosphate	30% (w/v) aq.	U	U
Trichloroacetic acid	soin.	S*	S*
Trichlorobenzene	All	U	U
Trichloroethane		S*	S*
Trichloroethylene		U*	U*
Tricresyl phosphate, see tritolyt		U*	U*
phosphate		U	U
Triethanolamine			
Trigot(tryethylene glycol)		S	U
3, 4, 5-Trihydroxybenzoic acid (gallic			
acid)		S*	S*
Trimethylamine		S*	S*
Trimenthylol propane (2-ethyl-2-hydrox-			
ymethyl Propanediol)		S	U*
Trisodium phosphate, see Sodium		S	U
orthophosphate			
Tritolyl Phosphate		U*	U*
Turpentine		S	S
Urea		S	S
Urine		S	S
Vanilaa extract +		S*	S*
Vegetable oil +		S	S
Vineger +		S	S
Vinyl acetate		U	U
Water		S	S
Wetting agents		S*	S*
Whey +		S*	S*
Wines and spirits		S	S
Xylene		U*	U*
Xylenol		U*	U*
Yeast +		S	S
Zinc ammonium chloride, see Ammoni-			
um zinc chloride		S*	S*
Zinc carbonate		S	S
Zinc Oxide			
Zinc sulphate			