

PRODUCT DATA SHEET

1.0 SCOPE

- 1.1 This specification describes style 553 which is a non asbestos sheet gasket material specifically designed to keep the environment free from hazardous substances by combining excellent sealing properties with an ecological composition.
- 1.2 Product 553 is manufactured for the oil refining industry, the chemical industry, the pulp and paper industry and power plants.

2.0 CONTENT AND CONSTRUCTION

- 2.1 Content
 - 2.1.1 Glass fibres
 - 2.1.2 Aramid fibres
 - 2.1.3 NBR
 - 2.1.4 Fillers
- 2.2 Construction
 - 2.2.1 Glass and Aramid fibres with an NBR binder
- 2.3 Colour
 - 2.3.1 Green with black print

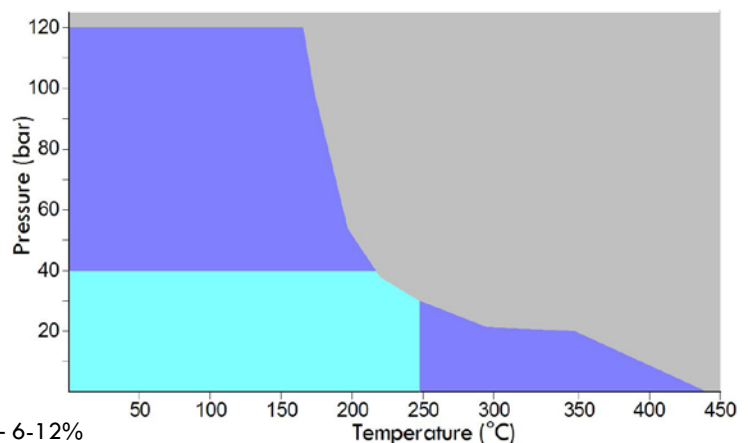


3.0 TYPICAL PROPERTIES

- 3.1 Pressure and temperature capabilities

	resistant
	resistant, but ensure that proper installation procedures are followed
	generally not resistant, consult engineering

*Pressure and temperature capabilities are an indication only.
Always consult Chesterton application engineering when in doubt.*



- 3.2 Physical properties

- 3.2.1 Compressibility (ASTM F36/J) – 6-12%
- 3.2.2 Recovery (ASTM F36/J) >55%
- 3.2.3 Tensile strength (DIN 52910) – 9 MPa
- 3.2.4 Stress resistance (DIN 52913)
 - 16h, 300°C, 50 MPa – 30 MPa
 - 16h, 175°C, 50 MPa – 35 MPa
- 3.1.7 Seal ability (DIN 3535/6) – 0.03 mg/(s*m)
- 3.1.8 Thickness increase (ASTM F146)
 - Oil IRM 903, 5h, 150°C – <5%
 - ASTM Fuel B, 5h, 23°C – ≤5%

- 3.3 Chemical properties

- 3.3.1 This material can be used in water, hydrocarbons, alcohols, oils, steam. See chemical resistance chart.

- 3.4 Approvals

- 3.4.1 553 has a DVGW, KTW and TA-Luft approval and is fire safe according to API 607.
- 3.4.2 BS 7531 Grade X

Chesterton International GmbH

Am Lenzenfleck 23
Ismaning 85737
Germany
Tel: 49-89-996-5460
Fax: 49-89-996-54660
Email: munich@chesterton.com
Web: www.chesterton.com

©A.W.CHESTERTON CO., 2011. All rights reserved.
®Registered trademark owned and licensed by
A.W.CHESTERTON CO. in USA and other countries.

CHEMICAL RESISTANCE TABLE

- A Compatible
 B Moderately compatible
 C Not compatible

Acetamide	A	Ethyl acetate	B	Oleic acid	A
Acetic acid 10%	A	Ethyl alcohol	A	Oleum	C
Acetic acid 100%	A	Ethyl chloride	B	Oxalic acid	B
Acetic ester	B	Ethylene	A	Oxygen	A
Acetone	B	Ethylene glycol	A	Palmitic acid	A
Acetylene	A	Formic acid 10%	A	Pentane	A
Adipic acid	A	Formic acid 85%	B	Perchloroethylene	B
Air	A	Formaldehyde	A	Phenol	C
Alum	A	Freon 12	A	Phosphoric acid	A
Aluminium acetate	A	Freon 22	B	Potassium acetate	A
Aluminium chlorate	A	Fuel oil	A	Potassium bicarbonate	A
Aluminium chloride	A	Gasoline	A	Potassium carbonate	A
Ammonia	B	Glycerine	A	Potassium chloride	A
Ammonium bicarbonate	A	Heptane	A	Potassium dichromate	A
Ammonium chloride	A	Hydraulic oil (Mineral)	A	Potassium hydroxide	A
Ammonium hydroxide	B	Hydraulic oil		Potassium iodide	A
Amyl acetate	B	(phosphate ester type)	B	Potassium nitrate	A
Aniline	C	Hydraulic oil (glycol based)	A	Potassium permanganate	A
Asphalt	A	Hydrazine	A	Propane	A
Barium chloride	A	Hydrochloric acid 20%	B	Pyridine	C
Benzene	A	Hydrochloric acid 36%	C	Salicylic acid	A
Benzoic acid	A	Hydrofluoric acid 10%	C	Silicone oil	A
Boric acid	A	Hydrofluoric acid 40%	C	Soap	A
Borax	A	Hydrogen	A	Sodium aluminate	A
Butane	A	Isobutane	A	Sodium bicarbonate	A
Butyl alcohol	A	Isooctane	A	Sodium bisulphite	A
Butyric acid	A	Isopropyl alcohol	A	Sodium carbonate	A
Calcium chloride	A	Kerosene	A	Sodium chloride	A
Calcium hydroxide	A	Lead acetate	A	Sodium cyanide	A
Carbon disulphide	C	Lead arsenate	A	Sodium hydroxide	B
Carbon dioxide	A	Magnesium sulphate	A	Sodium sulphate	A
Chloroform	B	Malic acid	A	Sodium sulphide	A
Chlorine, dry	C	Methane	A	Starch	A
Chlorine, wet	C	Methanol	A	Steam	A
Chromic acid	C	Methyl chloride	B	Stearic acid	A
Citric acid	A	Methylene dichloride	C	Sugar	A
Copper acetate	A	Methyl ethyl ketone	B	Sulphuric acid 20%	C
Creosote	C	Milk	A	Sulphuric acid 96%	C
Cresol	B	Mineral oil type ASTM no.1	A	Tar	A
Cyclohexanol	A	Naphtha	A	Tartaric acid	A
Cyclohexanone	B	Nitric acid 20%	A	Toluene	A
Decaline	A	Nitric acid 40%	B	Transformer oil	A
Dibenzyl ether	C	Nitric acid 96%	C	Trichloroethylene	A
Dimethyl formamide	C	Nitrobenzene	C	Water	A
Dowtherm	B	Nitrogen	A	White Spirit	A
Ethane	A	Octane	A	Xylene	B

Chesterton International GmbH

Am Lenzenfleck 23
 Ismaning 85737
 Germany
 Tel: 49-89-996-5460
 Fax: 49-89-996-54660
 Email: munich@chesterton.com
 Web: www.chesterton.com

©A.W.CHESTERTON CO., 2011. All rights reserved.
 ®Registered trademark owned and licensed by
 A.W.CHESTERTON CO. in USA and other countries.

EN13555 TEST DATA – TEST SAMPLE 92 x 49 x 2.0 mm

Minimum stress to seal $Q_{min/L}$ (at assembly), $Q_{sm/L}$ (after off-loading) for p = 20 bar										
L [mg/(s*m)]	$Q_{min/L}$ [MPa]	$Q_{sm/L}$ [MPa]								
		$Q_A=10$ MPa	$Q_A=20$ MPa	$Q_A=40$ MPa	$Q_A=60$ MPa	$Q_A=80$ MPa	$Q_A=100$ MPa	$Q_A=120$ MPa	$Q_A=140$ MPa	$Q_A=160$ MPa
10^{-0}	5	5	5	5	5	5	5			5
10^{-1}	11		5	5	5	5	5			5
10^{-2}	26			5	5	5	5			5
10^{-3}	43				7	5	5			5
10^{-4}	62					13	7			5
10^{-5}	82						27			12
10^{-6}	116									90
10^{-7}										
10^{-8}										

Minimum stress to seal $Q_{min/L}$ (at assembly), $Q_{sm/L}$ (after off-loading) for p = 40 bar										
L [mg/(s*m)]	$Q_{min/L}$ [MPa]	$Q_{sm/L}$ [MPa]								
		$Q_A=10$ MPa	$Q_A=20$ MPa	$Q_A=40$ MPa	$Q_A=60$ MPa	$Q_A=80$ MPa	$Q_A=100$ MPa	$Q_A=120$ MPa	$Q_A=140$ MPa	$Q_A=160$ MPa
10^{-0}	10		10	10	10	10	10			10
10^{-1}	18		10	10	10	10	10			10
10^{-2}	31			10	10	10	10			10
10^{-3}	47				11	10	10			10
10^{-4}	65					20	11			10
10^{-5}	89						54			31
10^{-6}										
10^{-7}										
10^{-8}										

Relaxation ratio P_{QR} for stiffness $C = 500$ kN/mm					
Gasket stress [MPa]	ambient temperature	temperature 1 [100 °C]	temperature 2 [200 °C]		
Stress level 1 [30 MPa]	0.96	0.78	0.67		
Stress level 2 [50 MPa]	0.95	0.74	0.64		
P_{QR} at Q_{Smax}	0.99 at 220 MPa	0.72 at 180 MPa	0.57 at 120 MPa		

Maximal applicable gasket stress Q_{Smax}				
Q_{Smax} [MPa] ambient temperature	Q_{Smax} [MPa] – temperature 1 [200 °C]	Q_{Smax} [MPa] – temperature 2 [300 °C]	Q_{Smax} [MPa] – temperature 3	Q_{Smax} [MPa] – temperature 4
220	180	120		

Sekant unloading modulus of the gasket EG [MPa]					
Gasket stress [MPa]	ambient temperature	temperature 1 [200 °C]	temperature 2 [300 °C]		
10		1142	864		
20	902	1902	2472		
30	1811	2078	3701		
40	2084	2833	4416		
50	2403	3645	4513		
60	2693	3336	5246		
80	3333	3847	5634		
100	4178	4577	6890		
120	5978	4589	8140		
140	6670	4451			
160	6223	5270			
180	5732	5610			
200	5210				
220	5403				
240					
260					
280					
300					
320					
340					
360					
380					
400					
420					
440					
460					
480					
500					

Chesterton International GmbH

Am Lenzenfleck 23
 Ismaning 85737
 Germany
 Tel: 49-89-996-5460
 Fax: 49-89-996-54660
 Email: munich@chesterton.com
 Web: www.chesterton.com

©A.W.CHESTERTON CO., 2011. All rights reserved.
 ®Registered trademark owned and licensed by
 A.W.CHESTERTON CO. in USA and other countries.

Chesterton International GmbH

Am Lenzenfleck 23
Ismaning 85737
Germany
Tel: 49-89-996-5460
Fax: 49-89-996-54660
Email: munich@chesterton.com
Web: www.chesterton.com

©A.W.CHESTERTON CO., 2011. All rights reserved.
®Registered trademark owned and licensed by
A.W.CHESTERTON CO. in USA and other countries.