

PRODUCT DATA SHEET

1.0 SCOPE

- 1.1 This specification describes 455EU sheet gasket which is a general service sheet gasket.
- 1.2 Product 455EU is manufactured for power generation, pulp and paper, water, petrochemical and chemical industry and is specifically designed for general applications, water applications and paper stock applications.

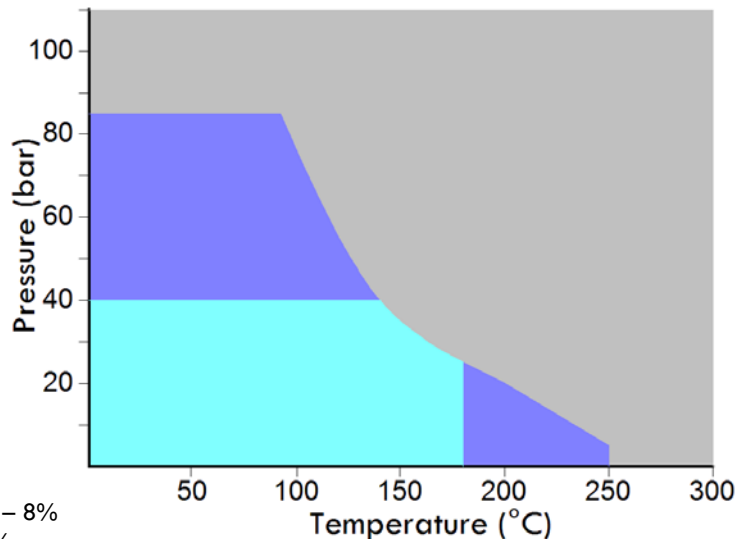
2.0 CONTENT AND CONSTRUCTION

- 2.1 Content
 - 2.1.1 Aramid fibres
 - 2.1.2 NBR
- 2.2 Construction
 - 2.2.1 An aramid fibre sheet with rubber binder
- 2.3 Color
 - 2.3.1 Light blue 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) – 8%
 - 3.2.2 Recovery (ASTM F36/J) – 55%
 - 3.2.3 Tensile strength (DIN 52910) – 11 Mpa
 - 3.2.4 Stress resistance (DIN 52913)
 - 16h, 300°C, 50 MPa – 22 MPa
 - 16h, 175°C, 50 MPa – 28 MPa
 - 3.1.7 Seal ability (DIN 3535/6) – 0.05 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, salt solutions, hydrocarbons, alcohols, oils and gases.
- 3.4 Approvals
 - 3.4.1 455EU has a DVGW and KTW approval
 - 3.4.2 BS 7531 Grade Y

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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%	A	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	A	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	A	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	A	Methane	A	Starch	A
Chlorine, wet	B	Methanol	A	Steam	A
Chromic acid	B	Methyl chloride	B	Stearic acid	A
Citric acid	A	Methylene dichloride	C	Sugar	A
Copper acetate	A	Methyl ethyl ketone	B	Sulphuric acid 20%	B
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%	B	Toluene	A
Decaline	A	Nitric acid 40%	B	Transformer oil	A
Dibenzyl ether	C	Nitric acid 96%	C	Trichlorethylene	B
Dimethyl formamide	C	Nitrobenzene	C	Water	A
Dowtherm	B	Nitrogen	A	White Spirit	A
Ethane	A	Octane	A	Xylene	B

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EN13555 TEST DATA

Minimum stress to seal Q_{min}/L (at assembly), Q_{smin}/L (after off-loading) for $p = 20$ bar										
L [mg/(s·m)]	Q_{min}/L [MPa]	Q_{smin}/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}	8	5	5	5	5	5	5			5
10^{-2}	22			5	5	5	5			5
10^{-3}	39			29	5	5	5			5
10^{-4}	55				23	6	5			5
10^{-5}	72					27	12			5
10^{-6}	97						83			70
10^{-7}										
10^{-8}										

Minimum stress to seal Q_{min}/L (at assembly), Q_{smin}/L (after off-loading) for $p = 40$ bar										
L [mg/(s·m)]	Q_{min}/L [MPa]	Q_{smin}/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}	14		10	10	10	10	10			10
10^{-2}	27			10	10	10	10			10
10^{-3}	42			10	10	10	10			10
10^{-4}	57				35	10	10			10
10^{-5}	76					39	19			10
10^{-6}	114									129
10^{-7}										
10^{-8}										

Relaxation ratio P_{GR} for stiffness $C = 500$ kN/mm					
Gasket stress [MPa]	ambient temperature	temperature 1 [100 °C]	temperature 2 [200 °C]		
Stress level 1 [30 MPa]	0.93	0.88	0.66		
Stress level 2 [50 MPa]	0.95	0.83	0.68		
P_{GR} at Q_{Smax}	0.98 at 220 MPa	0.73 at 120 MPa	0.57 at 100 MPa		

Maximal applicable gasket stress Q_{Smax}				
Q_{Smax} [MPa] ambient temperature	Q_{Smax} [MPa] – temperature 1 [100 °C]	Q_{Smax} [MPa] – temperature 2 [200 °C]	Q_{Smax} [MPa] – temperature 3	Q_{Smax} [MPa] – temperature 4
220	120	100		

Sekant unloading modulus of the gasket EG [MPa]					
Gasket stress [MPa]	ambient temperature	temperature 1 [100 °C]	temperature 2 [200 °C]		
10			420		
20	663	920	1039		
30	1022	1421	1391		
40	1593	1621	1729		
50	1704	2082	2380		
60	2390	2647	2799		
80	2831	2662	2870		
100	3359	3206	3134		
120	3876	3172			
140	4298				
160	4349				
180	5056				
200	4803				
220	4631				
240					
260					
280					
300					
320					
340					
360					
380					
400					
420					
440					
460					
480					
500					

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