



Material Data Sheet

Fairey has over a quarter of a century of manufacturing experience and is an acknowledged leader in the field of Industrial Porous Ceramics.

Fairey Filtration Systems Ltd has a range of standard ceramic materials, each having its own unique characteristics and capabilities. The materials are **CORALITH**, **PYROLITH**, **MICROLITH** and **CELLOTON**. This data sheet details the main physical properties for each.

CORALITH

Aluminosilicate particles bonded by glass. Coralith can withstand hot and cold acids (not hydrofluoric acid or acid fluorides), alkaline solutions up to pH9 and hot gases up to 900° C.

Grade	Filtration Nominal (microns)		Pore Diameter (microns)		Porosity (%)	Permeability (Darcies)	Strength (Mpa)
	Air/Gas	Liquid	Average	Maximum			
C0	0.3	1	11	15	35 - 45	0.5 - 1.2	25.5
C9	1	2	20	25	35 - 45	1.8 - 3.4	23.5
C8	3	6	30	35	35 - 45	3.7 - 6.7	20.5
C6	10	20	50	70	35 - 45	16.6 - 31.0	15.5
C5	20	40	90	110	35 - 45	38.4 - 71.1	12.0
C4	30	60	155	200	35 - 45	119 - 223	10.0
C3	50	150	300	400	35 - 45	227 - 423	7.5
C2	100	230	525	650	35 - 45	373 - 693	5.0

Chemical Composition

SiO₂ 10%
Al₂O₃ 85%
Trace Elements

Average Coefficient of Thermal Expansion for Coralith is 5 x 10⁻⁶
Average Bulk Density for Coralith is 2.0 g/cm³



PYROLITH

Aluminosilicate particles bonded by glass. Pyrolith can withstand hot and cold acids (not hydrofluoric acid or acid fluorides), alkaline solutions up to pH9 and hot gases up to 900° C.

Average Coefficient of Thermal Expansion for Pyrolith is 7×10^{-6}
Average Bulk Density for Pyrolith is 1.5 g/cm^3

Chemical Composition

SiO ₂	57%
Al ₂ O ₃	36%
Trace Elements	

Grade	Filtration Nominal (microns)		Pore Diameter (microns)		Porosity (%)	Permeability (Darcies)	Strength (Mpa)
	Air/Gas	Liquid	Average	Maximum			
P9	1	2	20	25	35 - 45	1.8 - 3.4	15.0
P8	3	6	30	35	35 - 45	3.7 - 6.7	10.5
P6	10	20	50	70	35 - 45	16.6 - 31.0	8.0
P5	20	40	90	110	35 - 45	38.4 - 71.1	6.5
P4	30	60	155	200	35 - 45	119 - 223	6.5
P3	50	150	300	400	35 - 45	227 - 423	5.0
P2	100	230	525	650	35 - 45	373 - 693	3.5

MICROLITH

Porous Siliceous Porcelain. Microlith's extremely fine pore structure can be utilised for various applications, such as controlled impregnant release and bleed valves in gas analysers.

Chemical Composition

SiO ₂	68%
Al ₂ O ₃	24%
Trace Elements	

Grade	Average Pore Size (micron)	Porosity (%)	Flexural Strength (Mpa)	Bulk Density (g/cm ³)
B9L	0.35	30 - 40	14.3	1.78

CELLOTON

Porcelain Mullite. Reaction bonded micro porous mullite media. Designed for resistance to acids and alkalis at high temperature. Suitable for use as a permeable membrane in soil science or geology studies.

Chemical Composition

SiO ₂	37%
Al ₂ O ₃	60%
Trace Elements	

Grade	Max. Pore Size (micron)	Air Entry Value (bar)	Porosity (%)	Flexural Strength (Mpa)	Thermal Coefficient of Expansion (x10 ⁻⁶)	Bulk Density (g/cm ³)
V1	1	2	35 - 45	34.0	6	1.7
V3	3	1	35 - 45	28.0	6	1.7

NB: The chemical resistance for ceramic media is dependent on the 'in-situ' conditions and should be checked for each application. The material data sheet has been compiled as a guide to material selection and in some cases is the 'average' for any one grade or physical size / dimension.

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