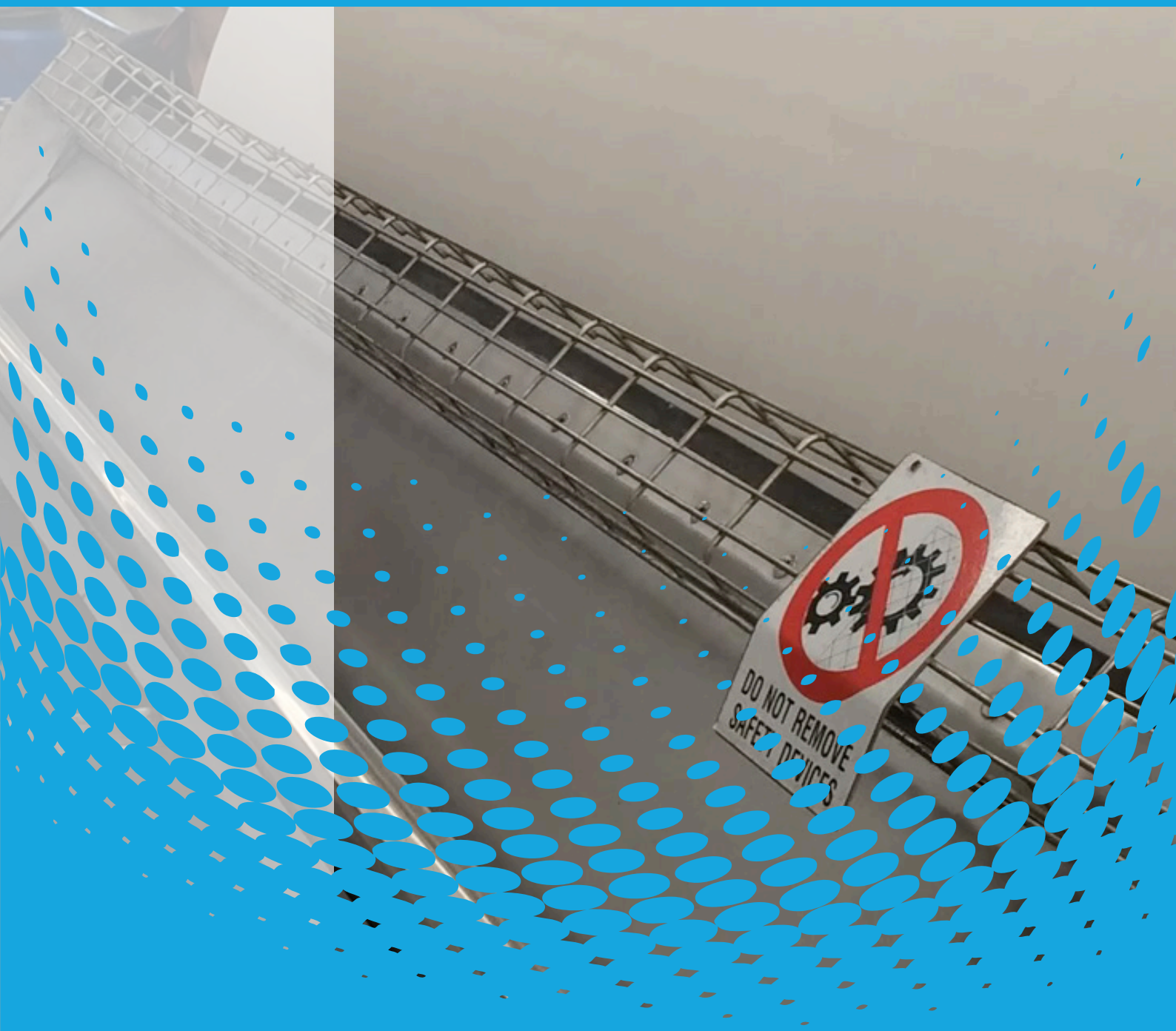
Perlite Filter Aids

The Uniform, Low Density Filter Aid for Economical Liquid/Solid Separation



www.ausperl.com

OUR COMPANY

AUSPERL Pty Ltd was incorporated in 2006 to purchase the perlite and vermiculite processing business previously operated by FERNZ and then ORICA in Australia. The business is family owned, and has been involved in the mineral processing industry since 1996.

► Perlite

AUSPERL has preferential agreements with suppliers from Australia, New Zealand, US, Greece and Turkey. The perlite ore is processed at our Sydney facility into a range of expanded and milled grades for use as a filtration media, a light-weight filler, soil-less growing media and as cryogenic insulation.

► Vermiculite

We have preferential supply agreements with ore suppliers in Australia, Brazil and South Africa. Applications for exfoliated product include fire proofing, refractory blocks, brake linings and horticulture.

► Pumice

AUSPERL is the appointed distributor in Australia of Industrial Processors Limited (INPRO) of New Zealand. Various grades of pumice are supplied including those for horticulture and construction, and highly processed and milled grades for mild abrasive applications (e.g. printed circuit board cleaning, soaps, dentistry and exfoliants).

► Celluose

AUSPERL is the appointed distributor in Australia of the cellulose products produced by Creafill USA Limited.

COMPETITIVE ADVANTAGES

- We match ore to outcome ensuring that specific applications are resourced with the most appropriate product.
- Complete range of filter aids, from very fast to highest clarity.
- Advanced manufacturing technology producing fast filter aids with the lowest floats, reducing filter aid consumption.
- Cyclonic separation technology minimising carryover of heavy unexpanded minerals, reducing effective filtration cost.
- Flexibility to supply in bulk bags, or ergonomic paper sacks.
- Our ISO9001 quality control procedures maintain the supplied products in specification at all times.
- Large production and warehousing facility ensuring ample stocks of ore and finished products.
- We can supply on demand with a minimum of delay or fuss from our dedicated interstate warehouses.
- We have an established and long history in the processing and trading of industrial minerals.
- Our products are always professionally packed and shipped.

PERLITE FOR FILTRATION APPLICATIONS

Perlite is a generic name for a naturally occurring siliceous volcanic rock. A unique property of perlite is that it expands up to twenty times its original volume when it is heated to its softening range.

This expansion process is caused by the presence of water in the crude rock. When perlite ore is rapidly heated to above 850c, this water vaporizes and causes the softened rock to expand. Tiny glass-like bubbles are produced which account for the light weight and exceptional physical properties of expanded perlite.

It is these light weight glass-like bubbles that are milled and classified under stringent quality control conditions to produce perlite filter aids. This material exhibits a unique, jagged interlocking structure with myriads of microscopic channels affording optimum flow rates and clarities for a wide variety of applications. Perlite filter aids do not impart taste, colour or odour to liquids being filtered and they are virtually insoluble in mineral and organic acids at all temperatures. Solubility in strong alkalis varies depending on temperature and contact time.

► Australian Materials, Australian Processed

AUSPERL perlite filter aid is produced using carefully selected perlite ore, processed in Padstow, Sydney, NSW. That means that we can deliver filter aid just in time minimising warehousing and distribution costs.

► Cost Advantage

AUSPERL perlite filter aids provide the user with a density advantage between 20-50% over other filter aids which is an important consideration when comparing costs.

AUSPERL perlite filter cake density is 110-270kg/m3. The dry density of perlite filter aid ranges from 100-200kg/m3. Experience in a variety of applications in many industries has shown that users of filter aids can substantially reduce filtration costs without sacrificing performance by converting to perlite filter aids.

► Usable with Standard Equipment

AUSPERL perlite filter aids can be used with both pressure and vacuum filtration equipment by merely replacing present filter aid. Plant or laboratory filtration studies will enable the selection of the optimum filter aid to be specified and the dosage that is required. Of special note is the fact that when AUSPERL perlite filter aids are used with rotary vacuum filters, filter cakes exhibit less cracking than when other filter aids are used.

► High Flow Rates

Due to their unique physical structure, AUSPERL perlite filter aids offer high flow rates with optimum density. They are especially applicable to highly viscous liquids such as syrup or gelatinous slurries requiring fast flow rates. Productivity, clarity and flow rates may be increased through the use of AUSPERL perlite filter aids.

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FULL RANGE OF GRADES

AUSPERL perlite filter aids are produced in a full range of grades to economically meet the flow rate and clarity requirements of almost every industry. Grades produced are as follows:

		AP10	AP20	AP40	AP60	AP70	AP80
		VERY SLOW	SLOW	MEDIUM	FAST	FAST	FAST
Relative Flow Rate	Seconds	180-290	100-230	50-80	25-35	15-25	10-12
Bulk Density	kg/m3	200-250	125-160	120-150	110-145	110-140	150-190
Wet Cake Density	kg/m3	310-380	250-336	210-290	200-280	180-250	160-220
Permeability	Darcies	0.05-0.15	0.21-0.27	064-1.02	1.46-2.04	2.04-3.41	4.50-5.20
ph in 10% slurry	Ph	7-8	7-8	7-8	7-8	7-8	7-8
Average Particle Size	microns	27	43	51	78	85	92
Median Size	microns	19	28	34	55	68	74
90% passing	microns	60	87	106	162	166	174

USE OF SPENT FILTER CAKE

A unique benefit to manufacturers using AUSPERL perlite filter aids in the food processing industry is that spent filter cake is used as a component in animal feed in many countries throughout the world. This reduces spent filter aid disposal costs. In the U.S., this application has been approved by the Association of American Feed Control Officials (AAFCO).

APPLICATIONS

Food Processing: Wine, Corn Syrup, Fruit Juice, Sugar, Pectin, Citric Acid, Vegetable Oils & Juices, Beer, Cider, Lard, Molasses, Soft Drinks, Casein.

Pharmaceutical: Enzymes, Epsom Salt, Penicillin, Streptomycin, Tetramycin.

Industrial: Water Treatment, Sizing's, Oil Recovery, Pool Waste, Greases, Solvent Recovery, Disposal Wells.

Chemical: Inorganic & Organic Chemicals, Resins, Sulphuric Acid, Polymers, Polyethylene, Brine, Adhesives, Titanium Dioxide, Fertilizers, Waste Disposal.

Paints/Coatings/Textiles: Waxes, Oils, Varnish, Gums, Shellac, Paint.

EASY CAKE RELEASE

Because they remain porous and do not compact, AUSPERL perlite filter aids afford easy cake release at the completion of the filtration cycle. Not only does this facilitate filter cleaning, but it reduces manpower requirements and increases productivity.

INERT-CODEX APPROVED

AUSPERL perlite filter aids are sterile and inert and are widely used for filtering liquids in the beverage, food and pharmaceutical industries. They do not impart taste, odour or colour and are listed in the U.S. Food Chemicals Codex, which is published by the National Academy of Sciences. This publication, which is a source of information on the quality and purity of food grade substances, is officially recognized by the U.S. Food & Drug Administration and has been adopted by many government agencies around the world.

TRACE ELEMENTS	PERCENTAGE (%)	TRACE ELEMENTS	PERCENTAGE (%)
Arsenic	<0.001	Lead	<0.001
Barium	<0.1	Manganese	<0.03
Boron	<0.01	Molybdenum	<0.002
Chlorine	<0.0005	Nickel	<0.002
Chromium	<0.0075	Sulfer	<0.2
Copper	<0.0015	Titanium	<0.1
Gallium	<0.05	Zirconium	<0.003

EXPANDED PERLITE			
TYPICAL CHEMICAL ANALYSIS		TYPICAL PHYSICAL PROPERTIES	
Silica	74.0%	Specific Gravity (g/ml)	2-2.1 g/ml
Aluminum Oxide	14.0%	Colour	Light Brown
Ferric Oxide	1.0%	Fusion Point	1260 – 1340c
Calcium Oxide	1.3 %	Softening Point	871 – 1093c
Magnesium Oxide	0.3%	Test Methods	
Sodium Oxide	3.0%	1 Chemical by XRF	
Potassium Oxide	4.0%	2 Moisture by drying 110 C for1.5 hrs	
Titanium Oxide	0.1%	3 LOI - muffle furnace at 1100 C/1.5 hrs	
Heavy Metals	Trace	4 Spec gravity by water immersion	
Sulphate	Trace	5 PSD by dry sieve on BS410 sieves	
Moisture	0.5%	6 Loose bulk density by DIN 53194	
Loss in Ignition	3.2%		
pH (water extract)	6.5 - 8.0		

COMPARISON TABLE					
AUSPERL	DICALITE	CELITE	SHOWA	CELATOM	KENITE
Perlite	Diatomite	Diatomite	Diatomite	Diatomite	Diatomite
AP10	215	Filtercel/500	R100	FN-2	100
AP10	Super-Aid	505		FP-1	
AP10	UF	577	R200	FW-2	
AP20	Speed-flow	Std. Super-cell	R300	FP-4	200
AP20 or AP40	231	512	R400	FW-6	290/300
AP20 or AP40	341			FW-12	
AP40	Speed-plus	Hy-flo	R450	FW-14	297/700
AP40	375	501	R500	FW-18	900
AP60	Speed-ex	503	R600	FW-20	1000
AP70	2500	535	R700	FW-40	2000
AP70	4200	545		FW-50	2500
AP80	4500	550	R900S	FW-60	3000
AP80	5000	555		FW-70	5500
AP80	5000	560	R1100	FW-80	
AP80	6000	580			

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