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Magnetite Size Analysis

Innovative technologies for efficient resource processing solutions

CleanProTech have developed a new laboratory method for analysing the particle size distribution of ultrafine particles, including magnetite.
This method is accomplished using sieves, which are the only correct method for determining particle size distribution of magnetite, according to the Australian Standards.

AS 4156.3-2008 - Section 6.1

"This section describes a method for determination of the particle size distribution of magnetite, using test sieves and a fluid based sub-sieve classifier.
NOTE: In the context of this Standard, the term 'sub-sieve' is taken to mean particle sizes less than 38 µm.
This section excludes the use of laser sizing techniques as any sizing methods other than sieving is unsuitable for magnetite."

Due to this, CleanProTech decided to extend the current working range for sieve analysis. It seems that the only reason for using the centrifugal classifier is that 'standard' laboratory sieve sizing techniques currently only go down to 38 micron.

CleanProTech has successfully been performing 20 micron sieve anlysis for many years at our laboratory and have recently added a 10 micron sieve analysis to our regular services.
(We also have the option to perform sieve size analysis at 5, 3 and 2 micron, if requested.)

Benefits include:

- Sieving is the only sizing method accepted for use with magnetite
- Ability to obtain a physical sample at each size fraction
- Larger sample mass can be used, giving sufficient mass for further analysis.
- As it is a physical sizing method, differences in particle density and material properties have no effect on the procedure, unlike commonly used centrifugal classifying and laser sizing methods.

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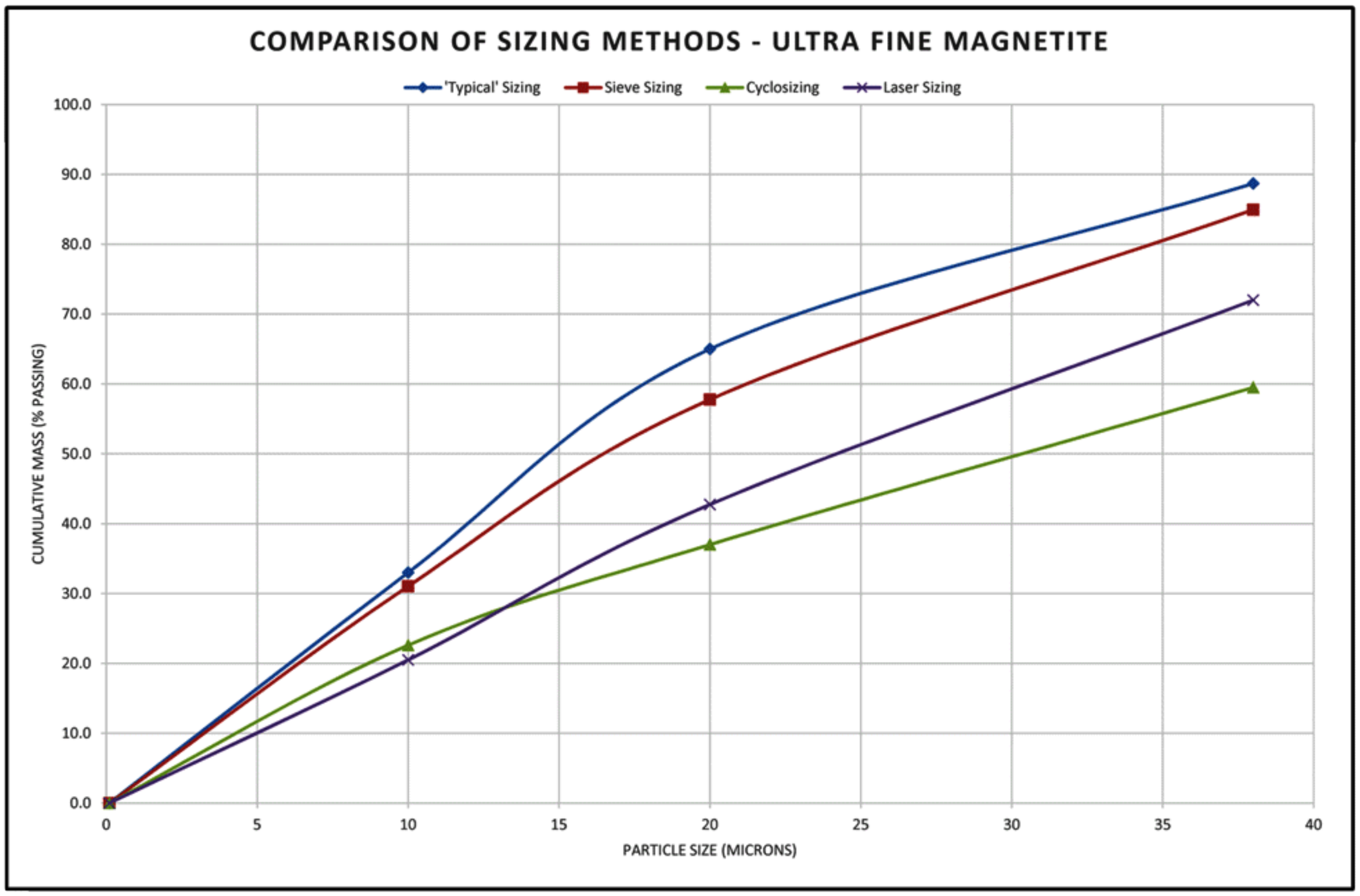

The above graph shows a sizing comparison of CleanProTech's ultra fine sizing versus conventional sizing methods such as centrifugal classification and laser sizing.

Table outlining prices for each size fraction.

CleanProTech have the required equipment to produce representative subdivision of samples either before the initial sizing stage and/or in between sizing stages to ensure the correct amount of material is being analysed in each size fraction. This can be used to reduce the amount of material being processed if there is a large proportion of undersize material.

*Larger amounts of retained mass available on request. Contact us for further pricing.

Sieve Size		Analysis Cost	Retained
		Sizing	Mass Limit
(micron)	(mm)	%, mass	(g)
			*
1000	1.000	$20	1000
500	0.500	$20	1000
250	0.250	$20	1000
125	0.125	$20	1000
63	0.063	$30	1000
45	0.045	$40	1000
38	0.038	$60	500
20	0.020	$100	200
10	0.010	$450	10
5	0.005	$450	10
3	0.003	$450	10
2	0.002	$450	10
-2	-0.002		5

Other services available from CleanProTech for laboratory analysis include;
Ultrafine particle size analysis at 20, 10, 5, 3 and 2 micron.
Ultimate Flotation Testing
Jameson cell flotation testing - small and large scale available.
Denver cell flotation testing
Particle density analysis
Solids concentration testing, on both mass and volumetric basis.
Moisture and ash analysis.

and a range of equipment to measure, monitor and control fines circuits is avaiable.

For more information contact Clean Process Technologies on
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