

JKMetLab offers mineral processing laboratory services to provide data for improving the efficiency in the mining industry

Sizing

JKMetLab can conduct particle sizing on mineral samples ranging in size from 300 mm to a few microns.



Sample Requirements

Sample size can range from approximately 100 g to several hundred kilograms (depending on the type of sizing required). Drying and sieve sizing is usually conducted in several stages.



Equipment Available

Hand Sieving

For particles in the 300 mm to 37.5 mm size range sizing is normally conducted by hand screening through purpose built templates.

Gilson Screens

In the size range 37.5 mm to 3.35 mm a vibrating Gilson Screen system may be utilized.

200 mm and 300 mm Screens

Particle sizes of less than 3.35 mm material can be dry screened using 200 mm or 300 mm diameter screens and a ROTAP screen shaker. Samples may require wet pre-screening prior to dry screening.

Warman Cyclosizer

The Warman Cyclosizer is used for the sizing of fine materials (less than 45 microns). Use of the Cyclosizer allows the collection of the various size fractions which may be required for chemical or mineralogical analysis.

The process involves wet hydrocyclone separation of size fractions and normally five spigot products are collected; however it is possible to recover Cyclosizer overflow as well.

Malvern Laser Sizer

The Malvern Laser Sizer is an optical method for the determination of particle size. These optical methods can be used for particles in the range 212 to 2 microns.

The process involves measurement of the optical properties of particles as they circulate past a laser in a liquid medium (usually water).

Metallurgical Laboratory Services



Processing

The whole sample is usually hand screened down to 37.5 mm then riffled to split the sample for sizing on Gilson screens.

The -3.35 mm material from the Gilson screening is further riffled to produce a sub-sample of appropriate size for 200 mm screen size analysis.

Samples are usually wet screened at 38 microns prior to screening dry on 200 mm diameter screens. Fine material (-38 microns) is recovered and weighed and may be subject to CycloSizer or Malvern Laser size analysis (pictured left).

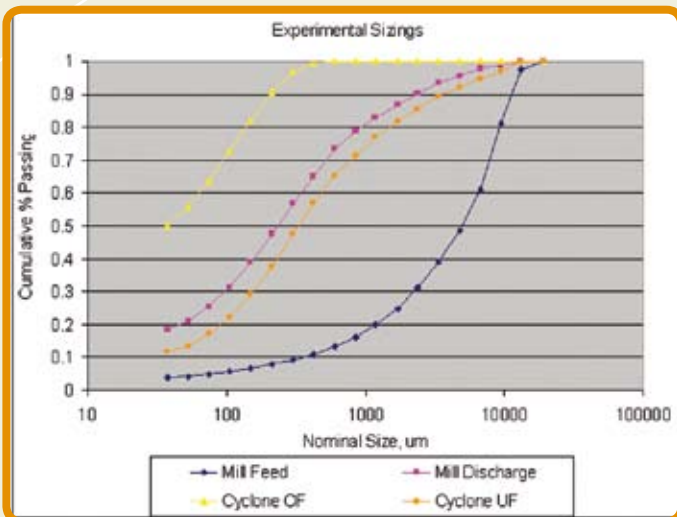
Reporting

Sizing distributions are normally reported by a PDF copy of the data entry spreadsheet.

Formal reporting is an extra charge unless part of a larger program of work.

Benefits

Sizings conducted on plant survey samples can generate data for JKSimMet simulation software which enables optimisation of plant performance.



Other JKTech Services

- Consulting (comminution, flotation, mine-to-mill)
- Quantitative Mineralogy (MLA and JKMineralogy)
- Specialist Software (JKSimMet, JKSimFloat, JKSimBlast)
- Metallurgical Laboratory Services
- Training Courses

Contact

John Dixon
Manager JKMetLab

Telephone: +61 7 3365 5908

Facsimile: +61 7 3365 5900

Email: j.dixon@jktech.com.au



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JKTech Pty Ltd

Isles Road, Indooroopilly, QLD 4068, AUSTRALIA
Telephone: +61 7 3365 5842 Facsimile: +61 7 3365 5900
info@jktech.com.au | www.jktech.com.au

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the minerals industry*