

# MIT-GROUP

MINERAL INNOVATIVE TECHNOLOGIES

METALLURGICAL

SAMPLING

LABORATORY  
EQUIPMENT

TURNKEY  
PROJECTS

COMPANY

PROFILE



## PRODUCTIVITY IN MINERALS

# ABOUT MIT GROUP

MINERAL INNOVATIVE TECHNOLOGIES GROUP, focused on growth through service and staff fulfilment, MIT's offering is a full range of Metallurgical, Sampling, Laboratory Equipment and Consumables. Local production is prioritised in our flexible fabrication facilities, this enables us to be a versatile, fast moving company.

Our technical experience in turnkey projects allows us to design, manufacture, supply, commission and train your staff, ensuring smooth project delivery.

MIT-GROUP's footprint spans across Africa, Australasia, Europe and South America.

At the MIT-GROUP we aim to provide superior products and unmatched service, delivered timeously across the globe.

## WHAT WE STRIVE FOR



QUALITY IN OUR SERVICE AND PRODUCTS



DELIVERING INNOVATIVE PRODUCTS



SAVING TIME WHERE IT COUNTS



INCREASING PRODUCTIVITY

**MIT-GROUP**  
MINERAL INNOVATIVE TECHNOLOGIES GROUP



**MIT-SA**  
MINERAL INNOVATIVE TECHNOLOGIES SA

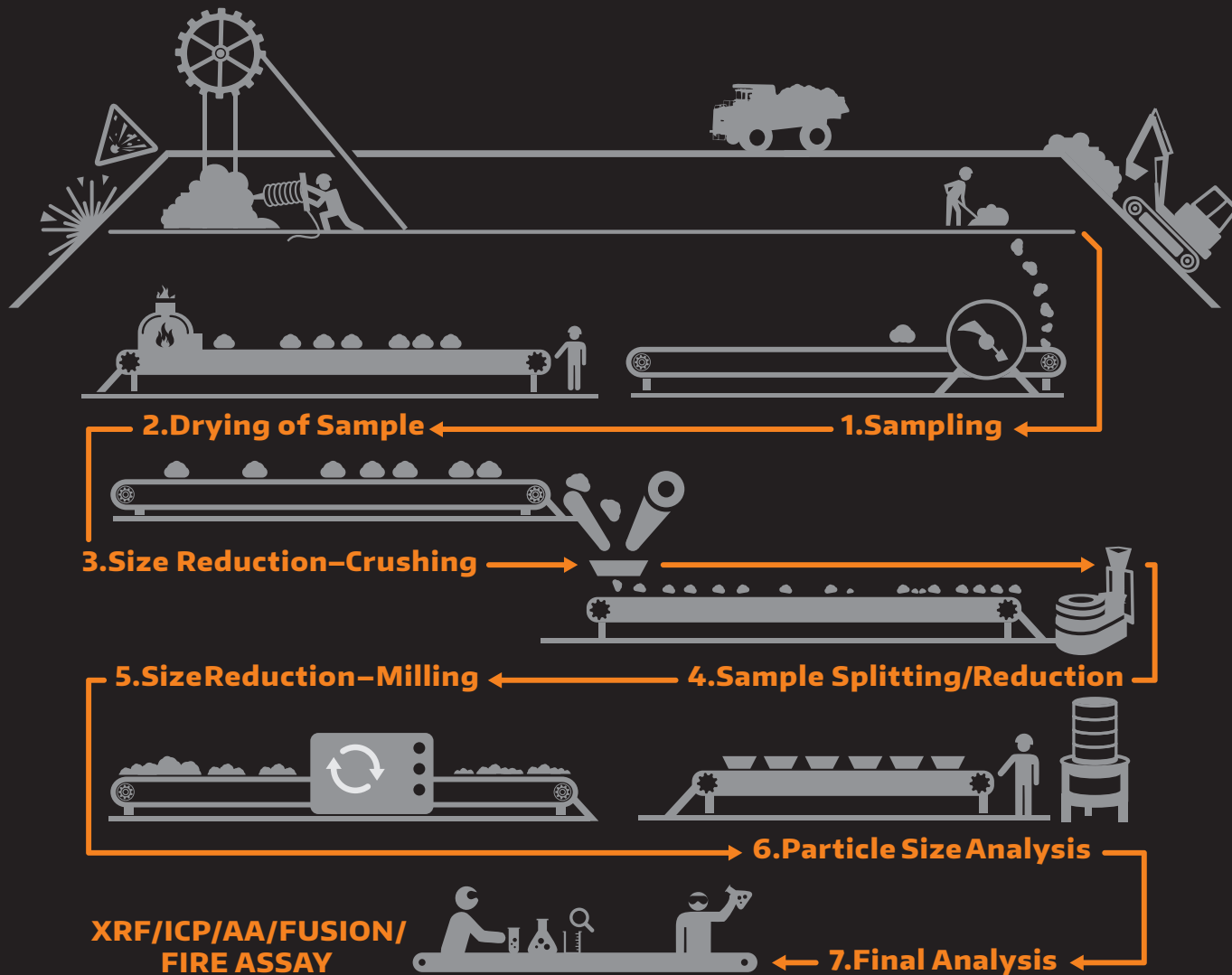
**MIT-AUS**  
MINERAL INNOVATIVE TECHNOLOGIES AUSTRALIA

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JULY 2019

# MIT GROUP PRODUCT FLOW



LABORATORY MILL

# METALLURGICAL & SAMPLE

# PREPARATION EQUIPMENT

SLURRY  
VACUUM  
SYSTEM

SIEVE SHAKER

BOTTLE ROLLER

FILTER  
PRESS

SAMPLE  
DRYING  
OVENS

CASCADE SPLITTER

LINEAR SHAKER



## SAMPLE DRYING OVENS

These robust and reliable industrial ovens are intended for a variety of drying operations and are designed for the harsh mineral industry.

- With a moisture expelling system to speed up drying times and reduce corrosion to the structure of the Oven
- Heavy Duty Handles & Construction

### SIZE RANGE AVAILABLE:

- 80lt / 240lt / 400lt / 800lt / 1400lt / 2000lt
- All ovens come with Analogue or Digital controllers
- Trolley load system available from 800lt and up
- Fixed shelf option for all models.



## INFRA-RED DRYING

These units are able to dry samples extremely quickly. Powered with 6 x 1000watt Infra-red Lamps, heat is instantaneous

### CONTROL PANEL CONSISTS OF:

- Timer
- Temperature PID Control
- Emergency Cut Off Switch

### EXAMPLE OF TEST RESULTS:

Product - Met Grade Chrome  
Mass: 380g  
Moisture content of sample: 15%  
Container: Stainless steel tray  
Distance IR to tray: 150mm  
Temperature: 150°C  
Drying Time: 3 Minutes



## LABRATORY FURNACES

- Loss on ignition
- Fusion
- High Temperature
- Ashing
- Furnaces supplied to suit any application
- Replacement Elements and rebuilding available

### FURNACE TYPES AVAILABLE:

- E Range Muffle Furnace
- LM Muffle Range
- E-Temp Range Furnaces (Industrial High Temp)
- Laboratory High Temp Chamber Furnaces
- Minimum Free Space Ovens
- Laboratory Slab Element Furnaces
- Coal and Coke Slab element furnaces
- Zircon alumina muffle for volatile or chemical applications



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## CASCADE SPLITTERS

We design and manufacture Rotary Splitters from as small as 36ml up to 2Ton+ capacity

### SYSTEMS INCLUDE:

- Vibratory feeders and controllers
- Feed Hoppers
- Clutch system for safety purposes
- Conveyer feeders for bigger systems.

### SPLITTING RANGES:

- 6 Way • 8 Way
- 10 Way • 12 Way.

### COLLECTION VESSELS:

- Glass Test Tubes
- Stainless Steel Cups
- Stainless and Mild Steel Drums
- Plastic Drums.

## FILTER PRESSES

- High quality materials, 300 WA, EN8, certified m/s and certified stainless steel 304 and 3CR12.
- The tubes for the pots are all certified to minimum pressure of 20 bar.
- All filter presses come standard with pressure relief valves (Set to 5 bar).
- Locally Manufactured.



Standard Sizes Available (Standard and Swing Barrel)	
6.2lt - 150mm diameter	16.4lt - 250mm diameter
10.7lt - 200mm diameter	23.4lt - 300mm diameter

## SLURRY VACUUM SYSTEMS

- 315 Dia interchangeable Vacuum pots with air tight O-ring sealed lids
- HDPE body in a powder coated steel frame with levelling feet.
- 220VAC Electricity actuated valves:
  - Vacuum
  - Drain
  - Pressure release
- Single 380VAC supply
- 380VAC Vacuum pump to suit

### SYSTEMS AVAILABLE IN:

- Single Station
- Double Station
- Four Station
- Six Station

Suitable for integration into your plant process



## LINEAR SHAKERS

- For larger volumes of wet screening test work
- Oversize & undersize collected in separate chutes
- Customisable According to Aperture Sizes and Throughput
- 4 Waterline Sprayers (Adjustable)



## ROD MILL

- Available in 13lt and 25 Lt capacity models
- Variable speed control
- Geared hand wheel system to assist with loading, grinding and discharging.



## ROLLS DRIVE MILL

- Bench Top or Frame Stand
- 5lt / 7lt / 10lt S/S Vessels
- Rod Charges available
- Rubberised rollers
- Multiple sizes available



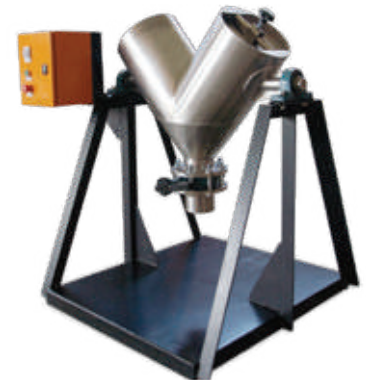
## BOTTLE ROLLER

- Leaching Applications
- Variable speed drive
- Safety cage with cutoff switch
- Fully customizable - length, rollers.



## STAINLESS STEEL Y-BLENDER

- Capacity range 35L – 500L
- Complete, fabricated from 304 stainless steel supported on a powder-coated mild steel open stand.
- Polished blender.
- The blender is fitted with inlet and outlet diaphragms





## MODULAR EXTRACTION UNITS

These systems are perfect for your Laboratory Sample Preparation area's. Offering a safe working environment for the operator, extracting and containing dust with it's built-in fan & filter system. No installation required, move into place and start operation.

### PRODUCT SPECIFICATIONS:

- Manufactured from 6mm PVC Material
- Vertical Downward Extraction in Enclosed Canopy 450mm(w) x 500mm(l)
- 230V / 550W (1 Phase) Power Supply and Switch Gear
- Ideal for cleaning Mill pots, Sieves, Splitter cups etc



## INDUSTRIAL SIEVE SHAKER



- Designed to accept 500kg of sample, which includes a closed tube feed conveyor
- The 2 tier system allows for separation of 10 particle sizes.
- Interchangeable poly-deck screens which allows for customising of aperture sizes
- Each particle size is discharged onto a RS232 compatible Load Cell
- All load Cells are linked to a central control board displaying the weights of each particle size.
- Timer
- Emergency ON/OFF Switch



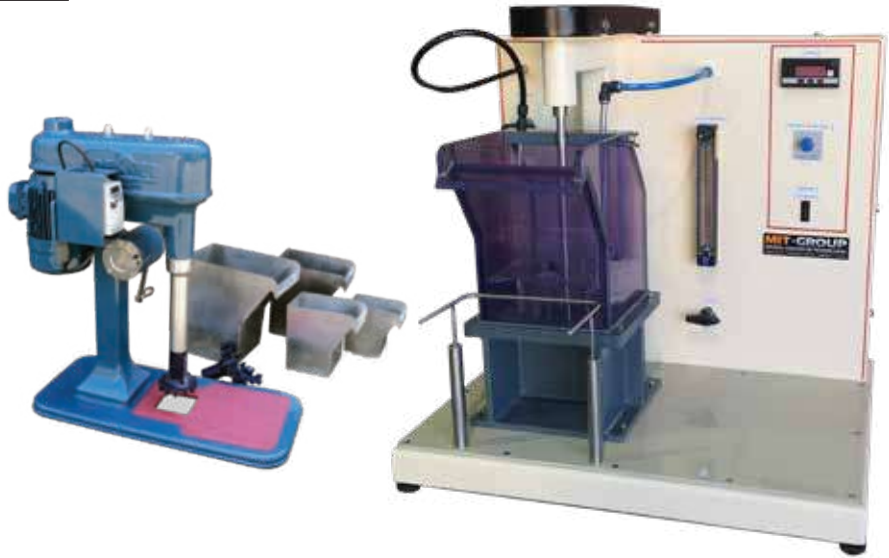
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## **FLOTATION** **MACHINES**

Flotation Machines for laboratory flotation

### **FLOTATION CELL SIZES:**

- 250g / 1lt
- 500g / 2lt
- 1000g / 4lt
- 2000g / 8lt
- Stainless steel cells
- Clear Perspex cells



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## **CUSTOM BIO** **LEACH PLANTS**

### **STAINLESS STEEL TANKS**

- Air Sparger
- Drain & Sample ports with ball valves
- Needle Air Control Valves with all piping, Tubing & Fittings
- Circulating Pump
- Control Solenoid Valves
- PT 100 Temperature Sensors
- 100L Feed Tank



# CONCENTRATE SHAKING TABLES

## Features:

- High weight reduction ratio of 90:1
- Deck designed for maximum recovery and the highest concentrate grade
- Chemical Free
- Low environmental impact
- High mechanical availability

The ST range is designed to allow for the production of a smeltable product from Gravity-recovered gold concentrates.

With a 90:1 weight reduction, the concentrates from the ST is of the highest grade while maintaining high recoveries



MODEL	ST30	ST120	ST500
Feed rate (kg/h)	30	120	500
Water requirement (l/h)	700	1400	2300
Water Pressure (kPa)	30	30	30
Power Requirement (kW)	0.75	0.75	0.75
Shipping weight (kg)	290	420	600



## JAW CRUSHER

The jaw crushers are designed to crush brittle bulk materials of various strength and hardness. In the jaw crushers, the material particles are broken down by the compressive and shear strains between the fixed and moving jaws. The grain size of the crushed material is determined by the gap between the jaws in the lower part (the discharge slot) and the physical properties of the material.



## VIBRATING GRINDERS

In a vibrating grinder, comminution occurs by means of abrasion – simultaneous compressive and shear strain of material particles between the crushing bodies and the cup walls. The grain size of the ground material depends on the grinder operating time, the initial grain size and the physical properties of the material, as well as the cup loading volume.

The VG 1 vibrating grinder is designed for comminution in intermittent operation of one sample with volume from 20 to 50 cm<sup>3</sup>, while the VG 3 vibrating grinder is designed to handle three such samples simultaneously. The VG 6 vibrating grinder is designed for simultaneous comminution of six small (up to 5 cm<sup>3</sup>) samples.



## ROTARY SAMPLE DIVIDER

- Simultaneous crushing and reduction of samples in a single process;
- Efficient operation by adjustment of grain-size composition of product and degree of reduction of sample within a wide range;
- Ability to carry out multiple crushing of samples to the required particle size with preservation or reduction of total weight of sample;
- Combined control panel;
- Stainless steel receiving tray with adjustable reduction;
- Latch between trays prevents sample from falling past trays.



## SIEVE SHAKERS

- High quality, confirmed by 100 Best Products in Russia and Made in St. Petersburg awards;
- Accurate, reproducible sieving results;
- Vibration drives equipped with shock absorbers to cancel out the vibration which occurs during operation;
- Made of materials permitted to come into contact with food products;
- Sieve Shakers on base Vibration drive VP 30, Vibration drive VP 30T and
- Vibration drive VPS are equipped with T80 support stands;
- Shakers on base Vibration drive VP 50 are equipped with T40 support stand and control panels;
- Small size and low weight;
- Low noise.



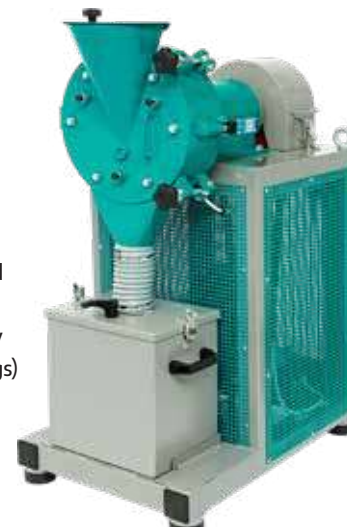
**VIBRATING CONE MILLS**


Cone mills are designed to crush and pulverize hard and brittle bulk materials of various strengths.

In the cone mill, pulverization occurs by means of abrasion – simultaneous compressive and shear strain of material particles between the outer and inner shells.


**DISC GRINDERS**

Disc grinders are designed for comminution of samples of bulk materials to a fine-grained state. In disc grinders, comminution occurs by means of abrasion – simultaneous compressive and shear strain of material particles between fixed and moving discs. The grain size of the comminuted product is regulated by the gaps between the discs (openings) and the physical properties of the material.


**SHAKER MIXER TURBULA S2.0**

Shaker mixers S 2.0 and S 50.0 are designed for mixing bulk or liquid substances.

The «Turbula» S 2.0 shaker mixer is laboratory-class equipment with a cup volume of 2 liters. The distinctive feature of the S 2.0 is the ability to adjust the rotational speed from 10 to 75 rpm.


**DRUM TUMBLER S50.0**

- No tool (vanes) inside the drum, which makes it possible to avoid grinding and destruction of particles during mixing;
- Operation in 3 mixing modes (with different drum tilt angles) depending on the properties of the material and the volume to which the drum is filled;
- The ability to turn the drum manually to load or unload material;
- The drum is made of food-grade stainless steel AISI 321;
- The drum is sealed by means of a quick-release cover with a gasket held in place by latches;
- Operating safety of the shaker mixers is ensured by a protective housing and a limit switch;
- Equipped with MPU3 control panel in metal housing;
- Adjustable tilt angle of drum relative to its axis of rotation (15, 30, 45 and 90°).




**DOUBLE ROLLER CRUSHER**

The roller crusher with smooth rollers DRC 200x125 is designed to crush brittle materials of various strengths. The operational principle of the roller crusher is based on simultaneous compressive and shear strains between rollers rotating in opposite directions. The grain size of the crushed material is determined by the gap between the rollers, the compressive force of the springs and the physical properties of the material.


**CUTTING MILLS**

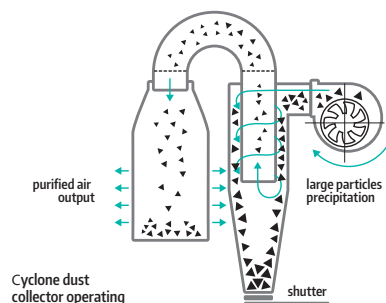
Cutting mills are designed to comminute fiber, polymer and plant materials. In cutting mills, comminution occurs by means of cutting – shear strains of material particles between rotor blades and a housing. The grain size of the comminuted product is regulated by the openings in the discharge grate and the physical properties of the material


**HAMMER MILLS**

Hammer mills are designed to crush brittle materials and break down conglomerates. The Hammer mill HM 2X2 is laboratory-class equipment designed to crush small batches of material with output up to 100 kg/hour. Hammer mills HM 5X2 and HM 5X5 are industrial-class equipment used in busy laboratories or in small and medium-sized production facilities. The operational principle of a hammer mill is based on impact on material particles.


**CYCLONE DUST COLLECTOR**

The cyclone dust collector is designed to create an air flow that captures the dust fraction of the material crushed and settles it in a cyclone and bag filter.



## SAMPLE SPLITTERS

Riffle sample splitters are designed to divide samples of bulk materials into two parts of equal size and with equal content. Sample splitters DP 5, DP 10, DP and DP 20 differ in the riffle width, sample receiver volume, and maximum particle size of the material to be divided.



- The splitting unit, sample collectors and charging shovel are made of stainless steel AISI 321;
- The detachable design allows full cleaning of the splitter;
- Low weight.

## SOIL GRINDERS

The SG 1 soil grinder is designed to grind dry soil samples without comminuting plant inclusions and result of material particles being crushed by rollers. The grain size of the comminuted product is regulated by the size of the discharge grating openings and depends on the physical properties of the material.



## VIBRATORY FEEDERS

- Stainless steel charging hopper with cover and tray;
- Ability to change feeder capacity using two methods:
  - adjusting the amplitude of the tray vibrations by changing the current flowing through the coil;
  - changing the thickness of the material layer on the tray (by adjusting the position of the hopper gate).
- Equipment of the feeder with rubber shock ab-sorbers to ensure stability in operation;



## VIBRATING TABLE

The VSA vibrating table is designed for vibration compaction of specimens of asphalt concrete mixes during testing in accordance with State Standard 12801-98 "Materials Based on Organic Binders for Road and Airport Construction. Test Methods."

The VSA vibrating table is equipped with two types of molds: 071,4 mm for samples of fine-grained asphalt concrete and 0101 mm for samples of coarse-grained asphalt concrete. The primary components of the product are the vibration drive, receptacle, mold with stamps and weights and control panel. The weight of the VSA vibrating table platform is selected so that the amplitude of the vibrations specified by the state standard is ensured when using both molds, without additional adjustments.



# SAMPLING AND CONSUMABLES

SAMPLING JARS

PAPER BAGS

LABELS

STAINLESS STEEL DRYING PANS

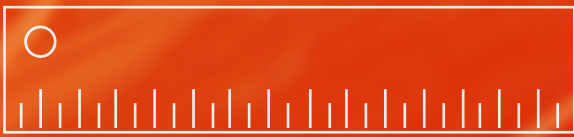
PLASTIC BAGS

AUTOMATED SAMPLE CUTTERS

SAMPLE CUTTERS

SAMPLING BUCKETS

SAMPLE BOTTLES





## MANUAL SAMPLE CUTTERS

Manufactured in 3 different designs, each design to suit your application. They are manufactured in a 1, 2 & 4L Capacity, the slot sizes are made to your requirements (eg. 200mm Long X 10mm Wide)

- **Type A** – Handheld Jug/ Pelican Type Cutter
- **Type B** – Jug/ Pelican Type Cutter with Extended Handle
- **Type C** – Flat Bottom Straight Edge Type Cutter with Extended Handle
- **The Type B & C Cutters** are supplied with a 1M Handle standard, but you can specify if a longer handle is required.

We are also able to manufacture any other design, to your specifications



## DENSITY AND MAGNETIC SAMPLERS

- Magnetic Separators
  - Wet Magnetic Chute
  - Handheld



- SG Scales
  - Digital
  - Mechanical
  - Flasks

## AUGERS

The stainless steel sampling augers are used for sampling of dry ore materials in mines and agriculture applications.

### SINGLE SAMPLE AUGER

- 28mm diameter
- 34mm diameter
- 38mm diameter
- 40mm diameter
- 50mm diameter

### DOUBLE SAMPLE AUGER

- 28mm/25mm diameter
- 38mm/34mm diameter



## CONSUMABLES

A full range of sampling consumables are available including:

- Labels
- Paper Bags
- Plastic Bags
  - 5L, 10L, 15L, 20L
- Sample Bottles
- Sampling Buckets with Lids:
- Sampling Jars
- Stainless Steel Drying Pans



FUME & DUST EXTRACTION

FILTER  
PAPER

LABORATORY  
CONSUMABLES

CHEMICALS

GLASSWARE

AA LAMPS

RO WATER SYSTEMS

LABORATORY  
EQUIPMENT

ULTRASONIC  
BATHS

LAB FURNITURE



# FUME EXTRACTION

Extraction systems for any application and environment.

- Fume extraction systems and cabinets. Supplied with chemical scrubbing systems, with optional maintenance contracts.

## VARIATIONS:

- Polypropylene Interior
- Hardcore Laminate Interior
- Perchloric Acid Applications

## SIZES:

- 1200mm Wide, 1500mm Wide, 1800mm Wide, 2100mm Wide and 2400mm Wide

## SERVICES:

- Water, LPG Gas, Vacuum, Compressed Air, Nitrogen and Other Specialized Gases



# AIRFLOW CONTROLS AND MONITORS



**TEL airflow controls** are designed to provide variable airflow volume and ensure the safety of users work with industrial & educational fume cupboards, fume hoods and biological safety cabinets.

**TEL airflow monitors** can be found in research centres, universities and laboratories across the world ensuring the safety of staff & legislation compliance.

## BENEFITS:

**SAFETY & COMPLIANCE** - Protecting your staff from potentially hazardous fumes and substances and ensuring you stay compliant

**RELIABILITY** - With no inherent drift, the unique sensor will provide stable readings over many years of operation without re-calibration, ensuring reliability and safety.

**ENERGY & COST SAVINGS** - The TEL VAV airflow controller reduces the volume of air taken from the fume cupboard when it is not being used, reducing energy by up to 85%, considerably reducing costs.

## DUST

## EXTRACTION

Dust Extraction for all Sample Prep Equipment: Splitter, Crushers, Mills, Shakers ect.

- Flexible Arms
- Hoods
- Extraction Fans
- Filters
- Ducting
- Installation
- Services
- Validations



### DUST EXTRACTION WORK BENCHES

- Designed & Manufactured to suit all Laboratories
- Provides a cleaner & healthier environment for all operators

## REVERSE OSMOSIS

## WATER SYSTEMS



High Grade water produced through highly advanced, non-chemical Reverse Osmosis purification system technology. Filtered and sterilized for specifically formulated use in critical applications where ultra-high purity water is essential.

Type 1 and Type 2 water applications.

- Stable high quality medium for water based chemical formulations
- Solution, dilution and processing of medicinal and chemical ingredients
- Spot free rinsing for laboratory equipment
- Solution and dilution of laboratory equipment
- Emulsion compatible due to low mineral content
- Industrial processes
- Rinse of semiconductor integrated circuits and electronic printed circuit boards
- Final rinse of electroplating equipment.

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## **ADD AIR SYSTEM**

- Made from Polypropylene
- Replaces 70% of extracted air
- Supplies the Laboratory with 3500m<sup>3</sup> of clean air per hour



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## **MODULAR DUST EXTRACTION**

- Flexible Arm Mobile Extraction System
- Flexible Arms - 2M Long
- Extraction Arm Mount Brackets
- Mobile Filter System
- Interior & Exterior: 10mm Polypropylene
- Size: 1200(H) x 1000(W) x 1000(D)
- Vertical Downward extraction through flexible Arms
- Filtration - High Dust holding Pocket filter
- 45% (Ashrae 52-75) - 5 Pockets
- Individual Filter & Extraction Fan Access Doors from the front of the unit
- Minihelic differential pressure gauges over filters
- 230V, 550W (1phase) power supply and switch gear
- Integral Earthling to electrical supply
- Lockable Castors



# LABORATORY FURNITURE

We manufacture custom furniture for all types of laboratories, meeting all the different types of conditions.

## CHEMICAL RESISTANCE TABLE TOPS:

Trespa, Polypropylene, Serino, Granite & Laminated Selinga

## TAPS & FITTINGS:

Water, Gas & Air

## BASINS:

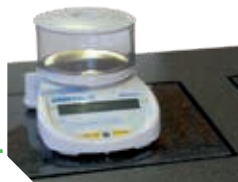
Epoxy, Ceramic & Stainless Steel

## BALANCE TABLES:

Single and Double

## EXTRAS:

Lab Stools, Drying Racks, Doors and Floors



# ACID STORAGE CABINETS



- Manufactured from Polypropylene – 100% Acid Resistant
- Under Work Surface or Free Standing
- Standard Size: 800mm (h) x 1000mm (w) x 550mm (d) (Special Sizes on request)
- Sliding Fold-away Doors – takes up no space in your walkways
- Adjustable Shelves with Removable Containment Drip Trays
- Adjustable Ventilation Option
- Easy Extraction Connectable Outlet
- Perfect for WET CHEM – No Corrosion No Deterioration

## SAFETY CABINETS FOR CHEMICALS

SAFETYBOX® for the storage of chemical, acid and base products comply with the requirements of EN 14727, EN 61010-1 norms, are TÜV certified and CE marked.

Tall, underbench, 1 or 2 doors, acid and base products in separate compartments.



AAW 600



AA 120



AB 1100A

### DESCRIPTION:

- E-FLOW® energy saving system.
- Painted with epoxide acid-proof dusts
- Activated charcoal filter Carbox®
- Cunctator® for filter replacement
- Termically protected electro aspirator.
- Certified palletized base.
- Bottom basin with drilled shelf in each compartment.



AB 1200.50



AB 900.50



A 600.50

## TEMPERATURE CONTROLLED WATERBATHS

- Durable epoxy powder coated metallic casing;
- Corrosion resistant Stainless Steel 304 bath ;
- Corrosion resistant stainless steel 304 sheath immersion heater directly heating water in the bath to reach set temperature quickly;
- Perforated heater cover helps convection of heated water circulation to maintain thermal uniformity of the bath; Maximum temperature up to 99 °C, accuracy  $\pm 0.1$  °C.



## ULTRA LOW COLD TRAP BATH



- Durable epoxy powder coated metallic casing
- Corrosion resistant seamless stainless steel 304 bath with cooling coil
- Transparent bath cover to hold glass trap and easy to check condensate level of trap
- Minimum temperature down to  $-85.0^{\circ}\text{C}$

## SHAKING WATERBATH

- Corrosion resistant stainless steel sheath immersion heater directly heating and boiling water in the bath to reach set temperature quickly
- Stainless Steel shaking rack and mechanism with powerful AC motor supports linear shaking motion up to 120 rpm
- Maximum temperature up to  $99^{\circ}\text{C}$ , accuracy  $\pm 0.2^{\circ}\text{C}$



## WATER BATHS

Water Baths conform to the Low Voltage Directive 73/23/EEC and are manufactured to highest standards.

### FEATURES:

- Micro Processor Models
- Digital Temperature indicator
- Audio / Visual high alarm
- Automatic water fill



## CIRCULATORS



- Bridge plate to straddle the tank or universal mounting clamp for clamping to the rim of virtually any tank - optional (minimum tank depth 150mm)
- Dual ventilation system
- Adjustable pump output control lever, 30 to 100% of flow rate
- Pump nozzle can be rotated to reach remote corners in vessel (screw drive required)

MODEL	WB-MP13 TO 27	WB-T13 TO 27
Temperature control range (Ambient +5 with out cooling) cooling not included	- 20 to $100^{\circ}\text{C}$	30 to $100^{\circ}\text{C}$
Control accuracy @ $40^{\circ}\text{C}$ With lid Display 0,3% of FS	+/- 0,2 $^{\circ}\text{C}$	+/- 1,5 $^{\circ}\text{C}$
Control Type	Digital PID Controller	Thermostat
Power supply 50Hz	230V $\pm 10\%$	230V $\pm 10\%$



## **RESEARCH** **CENTRIFUGES**

RESEARCH, UNIVERSITIES AND  
PHARMACEUTICAL LABORATORIES

Features of Pro-Research:

- Imbalance Protection
- Multi – Point Lid Locking
- Quiet Operation
- Refrigerated options
- Rotor Recognition
- Overspeed Sensor
- 3 Year Warrantee
- Multiple models and sizes available



## **ANALYTICAL** **CENTRIFUGES**

ANALYTICAL, GENERAL AND  
INDUSTRIAL LABORATORIES

Features of Pro-Analytical:

- Imbalance Protection
- Multi – Point Lid Locking
- Quiet Operation
- Rotor Recognition
- Multi Users
- High Technology AirFlow
- Ambient Mode
- 3 Year Warrantee
- Multiple models and sizes available



## DESICCATING CABINET

- Robust epoxy coated housing
- All stainless steel interior
- Hinged toughened glass door
- Stainless steel perforated shelves
- Stainless steel desiccant tray



## MAGNETIC STIRRERS

- Sizes available: 150 x 150 mm & 180 x 180mm
- Available with or without hotplate
- Stainless steel top
- Max. load 20 kg
- Surface temperature variable up to 350°C
- Speed range 100 – 1800 RPM



## LABORATORY SHAKERS

- Wrist Shakers
- Linear Shakers
- Orbital Shakers

### PLATFORM SHAKER:

- Micro Processor PID Controller
- Digital speed and timer indicators
- Audio / Visual alarms
- Digital Timer 1 to 999 minutes or hour:
- Front panel on/off switch
- Epoxy coated housing and cover



## HOTPLATES



- Heavy duty mild steel top
- Variable heat control
- Continuous use friendly
- Temperature control separate from hotplate optional
- Available in the following sizes:  
300×300mm, 300×450mm, 450×600mm

## HEATING BLOCK UNITS



Dry Block Heaters conform to the Low Voltage Directive 73/23/EEC and are manufactured to the highest standards with the following features:

- Micro Processor PID Controller
- Digital temperature indicator, 0,1°C
- Audio / Visual high temperature alarm
- Temperature Deviation indicators
- Digital Timer and buzzer 1 to 9999 minutes
- Interchangeable Aluminium Blocks
- Block Extractor
- Stainless steel sheathed heating element

## INCUBATOR



Incubators have 304 stainless steel inners, powder coated outer housings and fitted with a temperature controller, digital or thermostatic plus the following:

- Over temperature safety thermostat
- Over temperature indicator lamp
- Fan assisted air circulation
- Non tip shelf runners
- Adjustable fresh air vent and supplied with two chrome plated wire shelves

## INCUBATOR SHAKERS



FMH Incubator Shakers conform to the Low Voltage Directive 73/23/EEC and are manufactured to the highest standards with the following features: - **Incubator Shaker with Cooling option available.**

- Micro Processor PID Controllers
- Digital Temperature, Speed and Timer indicators
- Audio / Visual alarms
- Over temperature safety thermostat and indicator lamp

## SLIDE WARMER/ MINI INCUBATOR



- Temperature range amb +5 to 100°C
- Black Aluminium Top
- Mat heater for uniform temperature
- Slide rack adjustable height 0 to 25mm
- Rack holds approx. 40 slides (25x75mm) or as Incubator- 8 Petri dishes 1 layer.

## HEATING MANTLES



- Hand woven mineral wool with flexible braiding, which adapts snugly around the flask,
- The heating element is distributed homogeneously throughout the mantle.
- Double walled fibre wool thermally insulated casing.
- Pure Nickel connection terminals protected by mineral fibre tubing that prevent the deterioration of the contact due to high temperature.
- For digestion distillation, extraction, evaporation and boiling processes.

## VACUUM PUMPS

- Contamination-free pumping and evacuation
- Even high Flow rate
- Quiet and low vibration
- Durable and maintenance-free drive system
- For corrosive and non-corrosive gases and vapours



## MICRO- SCOPES

- Digital and Stereo Microscopes
- Microscope Cameras
- LED illumination provides constant colour temperature at all light intensity levels



## ULTRASONIC CLEANERS



- Maintaining and Cleaning of Test Sieves and other components
- With or without heating option available
- Analog or Digital Timers

### SIZES AVAILABLE

- 600ml, -Tank size: 152 x 88 x 65 mm
- 1.3lt, -Tank size: 150 x 135 x 65 mm
- 2lt, -Tank size: 150 x 135 x 100 mm
- 3.2lt, -Tank size: 240 x 135x 100 mm
- 6.5lt, -Tank size: 300 x 150 x 150 mm
- 10lt, -Tank size: 300 x 240x 150mm
- 15lt, -Tank size: 330 x 300x 150 mm
- 22lt -Tank size: 500 x 300x 150 mm
- 30lt -Tank size:500 x 300x 200mm

## TURBIDITY METERS



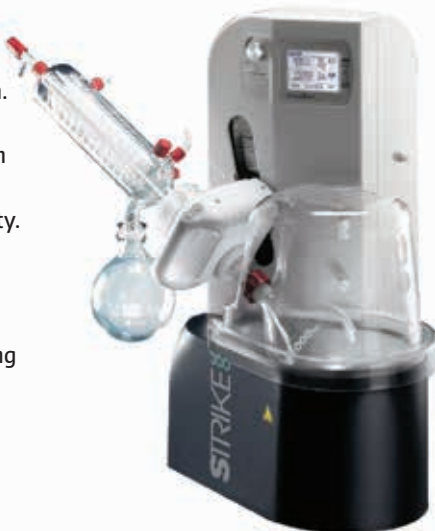
Turbidity Meters handheld & benchtop is specially designed for water quality measurements, providing reliable and accurate readings in the low turbidity range.

## ROTARY EVAPORATOR

The rotary evaporator STRIKE 300 combines excellent operating characteristics and high performance levels, all in an ergonomic design. STRIKE 300 has been projected in complete respect of safety needs and in compliance with the existing directive regarding equipment construction and electromagnetic compatibility.

### FEATURES:

- Multifunction touch-screen
- Maintenance-free vacuum and solven sealing
- Powered glassware lifting equipment as standard
- Removable safety shield
- Removable thermostatic bath
- Easy to use
- Compact design



## SCALES & BALANCES

We stock a range of High accuracy, low capacity analytical balances or a high capacity platform scales.

### BALANCE RANGES AS FOLLOWS:

0.0001g – 120g to 250g Capacity

0.001g – 150g to 750g Capacity

0.01g – 1500g to 6000g Capacity

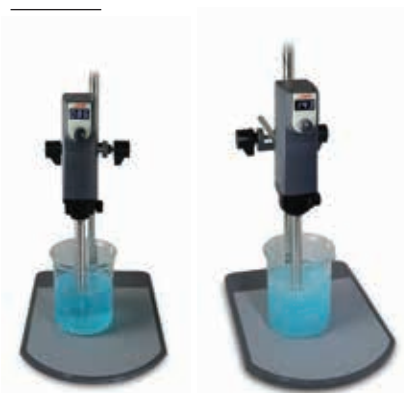
0.1g – 4000g to 30kg Capacity

### SCALE RANGES AS FOLLOWS:

- 0.1g – 8000g Capacity
- 0.5g – 16kg Capacity
- 1g – 32kg to 75kg Capacity
- 2g – 60kg to 150kg Capacity
- 5g – 75 to 120kg Capacity
- 10g – 150kg Capacity
- 20g – 60Kg Capacity
- 50g – 150kg to 600kg Capacity
- 100g – 300Kg Capacity



## HOMOGENIZER



The ideal solution for dispersing, homogenizing and mixing biological tissues (cells, animal and vegetable tissues), pharmaceutical products, cosmetics, and food products.

## DRYING OVENS

Ovens have 304 stainless steel inners, powder coated outer housings and fitted with a temperature controller, digital or thermostatic plus the following:

- Over temperature safety thermostat
- Over temperature indicator lamp
- Fan assisted air circulation
- Non tip self runners
- Adjustable fresh air vent and supplied with two chrome plated wire shelves



## VORTEX MIXERS



Vortex mixers suitable for mixing substances in any shape or size of test-tube thanks to the orbital movement of the rubber cup and many accessories/attachments.

## OVERHEAD STIRRER

### Digital Fuzzy Control

Digital Fuzzy Logic Controller precisely controls Stirring Speed by 1 rpm resolution. Digital Timer from 1 min to 99 hour 59 min

### Touch Button

Touch-sensitive Multi-Functional Capacitive Button compatible to all kind of latex gloves as well as finger touch

### Jog Dial

Easy-to-use Jog Dial for quick and convenient setting of stirring speed and timer. Push to Run, Stop and Save Set RPM and TIMER

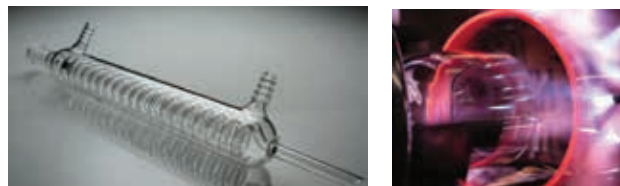
### Hi-Fidelity LCD

High-fidelity clear back light LCD displays complete operating conditions at a glance. Easy to monitoring set values, present stirring speed and timer.



## GLASS BLOWING SERVICES

Custom and Unique Glassblowing services available for your distinct requirements.



## CONSUMABLES

- Aluminium Scoops
- Automatic Liquid Handlers
- Benchtop Timers
- Burettes
- Chemicals – Lab
- Clamps
- Cleaning Brushes
- Colorimeters
- Digital Thermometers
  - Contact
  - Infrared
- Dispensers-Bottle top
- Dissolved Oxygen Meters
- Flocculators
- Handheld and Benchtop Meters
  - PH/Con/DO/TDS/Temp/Mv
- Heating Mantles
- Hydrometers
- Laboratory Trolleys
- Magnetic Stirrer bars
- Melting point apparatus
- Moisture Balances
- pH Electrode
- Pipettes
- Polarimeters
- Polarimeter Sample Cells
- Refractometers
- Sample Tags
- Spatulas and Tongs
- Saccharimeters
- Saccharimeter Sample Cells
- Stirrers, Mixers and Blenders
- Titrators
- Thermal Cyclers
- Transilluminators
- Wash Bottles
- Vacuum Pumps
- Viscometers
- Vortex Mixer



## LABORATORY TROLLEYS

We offer a wide range of trolleys suitable for use in laboratories. Available in different styles and materials, they are all easy to keep clean and hygienic and are well-suited to transporting materials in lab environments. Choose from trolleys with two or three shelves as well as platform trolleys and tray trolleys. If required we can custom build a trolley to suit your needs.



## CALIBRATION SERVICES

Specialising in the fields of Pressure, Temperature, and Mass, we will ensure that you are certain of your measurements! Visit our website for more information.

### Calibration of all Pressure Instrumentation including:

- Pressure Gauges
- Vacuum Gauges
- Digital Pressure Indicators
- Barometers
- Data Loggers
- On-site Calibrations

### Calibration of all Temperature Instrumentation including:

- Temperature Gauges
- Thermocouples (All Types)
- Water/Oil Baths
- Furnaces (on-site)
- Incubators (on-site)

### Calibration of all Mass Instruments including:

- Single Weights
- Weight Sets
- Mass Balances / Scales (on-site)



## GLASS & PLASTIC WARE

We offer a full range of glass and plastic ware for laboratories, please scan the QR code or visit our website to download the full list of consumables.



## GLASS WASHERS

The lab glassware washers integrate programmed cleaning, disinfecting and drying functions to clean all glassware stuff, for beaker, flask, pipette, petri dish, burette, measuring cylinder, test tube etc.

- High efficient cleaning system
- Rapid and efficient drying system
- Water heating temperature can reach 99°C
- hot air drying temperature can reach 120°C.
- stainless steel for corrosion resistance



## MEDICAL FRIDGES

Medical Refrigerator is specialized refrigerating equipment for cold storage of pharmaceuticals as well as biological products and so forth. It is suitable for hospital, drugstore, pharmaceutical factories, sanitation and antiepidemic station and clinics.

### -25°C TO -86°C FREEZER

The Low Temperature Freezer offers a wide variety of research and storage application, such as low temperature scientific experiments, preservation of plasma, biomaterial, vaccine, biomedical properties of military products.

It is suitable for research institutes, electronic industries, chemical engineering industries, hospitals, sanitation and antiepidemic stations, university laboratories, military industries.



LABORATORY GLASS & PLASTIC WARE

ALUMINIUM  
SCOOPS

CRUCIBLES

FILTER  
PAPER

DISPENSERS

SAMPLE TAGS

ANALYTICAL  
EQUIPMENT

CHEMICALS

TEST  
SIEVES

HEATING MANTLES





# AUTOCLAVES FLOOR STANDING

JSAT-Series Autoclave, Steam Sterilizer is an innovative replacement of conventional laboratory autoclave by providing reliable performance, up-to-date design and safety door inter-lock system integrated with temperature and pressure for perfect user safety.

JSAT-Series Autoclave, Steam Sterilizer is for sterilization of bacteria, microorganism and virus with steamed hot air usually at 121°C, 0.12 Mpa. Sterilization for laboratory ware needs being sterilized before use such as flasks, bottles, pipets, animal cages and plastic ware, broth or agar media for bacterial culture or disposal of biohazard wastes such as syringe, cloth, gloves or petri dishes

## PROGRAM CONTROL

Fully automatic autoclave cycle Maximum sterilization temperature and pressure up to 123 °C and 0.13 Mpa Validation compliance performance accuracy within ± 0.5 °C uniformity within ± 2.0 °C

## CONSTRUCTION

Vertical loading chamber with light weight self balanced door  
Stainless steel 304 chamber, lid and top plate

## SAFETY

SAFETY DOOR INTER-LOCKING SYSTEM lock the door during operation which integrated with temperature, pressure in the chamber and in case electric cut-off

## CONVENIENCE UTILITY

Two steam collection bottles removes most of steam generated during operation for comfortable laboratory environment

- Max. 123 °C
- Timer On / Off
- Automatic sterilization cycle



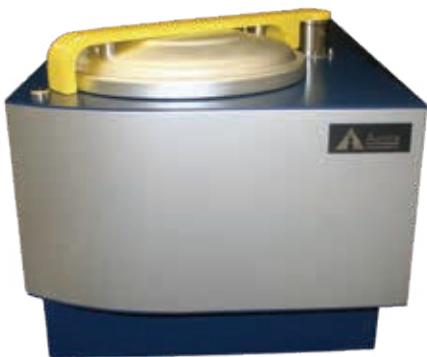
## JSAT-SERIES VERTICAL AUTOCLAVE



- Max. 250 °C
- Constant Temperature
- Timer On / Off

## TRANSFORM 680 MICROWAVE DIGESTION

- 6 Vessels (5 Standard & 1 Sensor Vessel)
- 400 psi Operating Pressure
- 250°C Operating Temperature
- 60mL Vessel Volume
- Microwave Power 1200W
- Magnetron Frequency 2450 Mhz



## TRANSFORM 800 MICROWAVE DIGESTION

- 10 Vessels (9 Standard & 1 Sensor Vessel)
- 800 psi Operating Pressure
- 250°C Operating Temperature
- 50mL Vessel Volume
- Microwave Power 1200W
- Magnetron Frequency 2450 Mhz



## LUMINA 3400 ATOMIC FLUORESCENCE SPECTROMETER

The LUMINA 3400 Atomic Fluorescence Spectrometer utilizes precise syringe pumps to provide sub trace detection and elemental analysis of hydride-forming elements. The unique vapour/hydride generator provides enhanced sensitivities and reduced interferences for parts per trillion (ppt) detection of Mercury (Hg), Arsenic (As), Cadmium (Cd), Zinc (Zn), Bismuth (Bi), Selenium (Se), Tellurium (Te), Antimony (Sb), Tin (Sn), Germanium (Ge), and Lead (Pb).

- Sub-trace level detection limits for mercury and hydride-forming elements
- Linear dynamic range of  $10^3$
- Covered optical design
- Dual-channel simultaneous measurement
- All-in-one mixing manifold, low dead volume, high efficiency, double gas/liquid separator design
- Automatic Ar-H<sub>2</sub> flame ignition



## **TRACE AI 1200 ATOMIC ABSORPTION SPECTROMETER**

The TRACE AI1200 Atomic Absorption Spectrometer is a fast and accurate system. Features such as the fast dry technology alongside the optional autosampler completely removes sample splatting, this details better detection whilst considerably shortening analysis time.

Taking advantage of the multiple atomizer configurations allows for high-intensity analysis whilst providing the ultimate ease of use within multiple applications settings such as environmental, agricultural and clinical, as well as high throughput labs. The TRACE AI1200 features 300mm focus length and Czerny-Turner 1200 line/mm grating optics, this paired with both D2 and Smith-Hietftje background correction gives rise to greater performance.



## **TRACE AI 1800 ATOMIC ABSORPTION SPECTROMETER**

The TRACE 1800 is a high-performance atomic absorption system. The combination of D2 and Smith-Hietftje background correction techniques alongside 1800 line/mm optic grating gives clear, consistent results.

The instrument is supplied with an 8 lamp motorized array which offers the highest sensitivity on the market. The TRACE 1800 has the most versatile autosampler and combined with the fast dry technology completely removes sample splatter, shortens the analysis time and gives rise to unparalleled detection.



## **HOLLOW CATHODE LAMPS**

Directly used in the following AAS systems: Agilent, Varian, Analytic Jena, Thermo Fisher, GBC, Shimadzu, Hitachi and many more. Cathodes are designed with either a pure element or compound to produce the best sputter rate at the lowest current. To enable a lamp to run the most economical way possible.

Note: increasing lamp current increases the sputter rate and decreases lamp life, sensitivity and linearity. Hollow cathode lamps produced by Green Scientific are designed and manufactured to achieve all of the following fundamental requirements for a spectral line source.

- Intense emission of resonance (ground state derived) lines.
- Narrow line width, for maximum sensitivity and linearity.
- Minimal spectral interference from continuum emission, present in the cathode.
- Rapid warm up to produce stable long term light emission.
- Noise free operation.
- Long running life and a 5 year shelf life.



**ELEMENTS** **TABLE**

Symbol	Part No.	Primary Wavelength	Secondary Wavelength	Secondary Wavelength
Al	G801	396.2nm	308.2nm	309nm
Sb	G802	217.6nm	206.8nm	217.9nm
As	G803	193.7nm	189nm	197.2nm
Ba	G804	553.5nm	455.4nm	493.4nm
Be	G805	234.9nm	-	-
Bi	G806	223.1nm	222.8nm	227.7nm
B	G807	249.8nm	208.9nm	-
Cd	G808	228.8nm	326.1nm	-
Ca	G809	422.7nm	239.9nm	-
Cs	G810	852.1nm	455.6nm	-
Ce	G811	520nm	569.7nm	-
Cr	G812	357.9nm	425.4nm	427.5nm
Co	G813	240.7nm	304.4nm	-
Cu	G814	324.8nm	217.9nm	218.2nm
Dy	G815	421.2nm	404.6nm	-
Eu	G816	459.4nm	462.7nm	-
Gd	G818	368.4nm	405.8nm	407.9nm
Ga	G819	294.4nm	403.3nm	417.2nm
Ge	G820	265.2nm	271nm	-
Au	G821	242.8nm	267.6nm	-
In	G824	303.9nm	325.6nm	410.2nm
Ir	G825	208.9nm	264nm	266.5nm
Fe	G826	248.3nm	248.8nm	372nm
La	G827	550.1nm	403.7nm	-
Pb	G828	217nm	283.3nm	261.4nm
Li	G829	670.8nm	323.3nm	-
Lu	G830	353.9nm	356.7nm	337.6nm
Mg	G831	285.2nm	202.5nm	-
Mn	G832	279.5nm	279.8nm	280.1nm
Hg	G833	253.7nm	-	-

Symbol	Part No.	Primary Wavelength	Secondary Wavelength	Secondary Wavelength
Mo	G834	313.3nm	320.9nm	-
Nd	G835	492.5nm	463.4nm	-
Ni	G836	322nm	321.1nm	341.5nm
Nb	G837	334.9nm	405.9nm	408nm
Os	G838	290.9nm	305.9nm	426nm
Pd	G839	247.6nm	244.8nm	340.5nm
Pt	G840	265.9nm	264.7nm	299.8nm
K	G841	766.5nm	404.4nm	769.9nm
Re	G843	346nm	346.5nm	-
Rh	G844	343.5nm	328.1nm	369.2nm
Rb	G845	780nm	794.8nm	-
Ru	G846	349.9nm	392.6nm	-
Sm	G847	429.7nm	476nm	-
Se	G849	196nm	204nm	-
Si	G850	251.6nm	250.7nm	251.4nm
Ag	G851	328.1nm	338.3nm	-
Na	G852	589nm	330.2nm	589.6nm
Sr	G853	460.7nm	407.8nm	-
Ta	G854	271.5nm	275.8nm	-
Te	G855	214.3nm	225.9nm	-
Tl	G857	276.7nm	258nm	-
Sn	G860	235.5nm	224.6nm	266.1nm
Ti	G861	364.3nm	365.4nm	399nm
W	G862	255.1nm	294.7nm	400.9nm
V	G864	318.5nm	306.6nm	318.4nm
Yb	G865	398.8nm	346.4nm	-
Y	G866	410.2nm	414.2nm	-
Zr	G868	360.1nm	468.7nm	354.8nm
Zn	G869	213.9nm	307.6nm	-
P	G874	213.6nm	-	-

**CODED LAMP S**

G800AC Series = Agilent and Varian coded - 4 pin plug

G800TC Series = Thermo / Unicam coded - 7 pin plug

G900L Series = Perkin Elmer Analyst - Cableless - 4 pin plug

**LABORATORY GLASS & PLASTIC WARE**

**ALUMINIUM  
SCOOPS**

**CRUCIBLES**

**FILTER  
PAPER**

**DISPENSERS**

**SAMPLE TAGS**



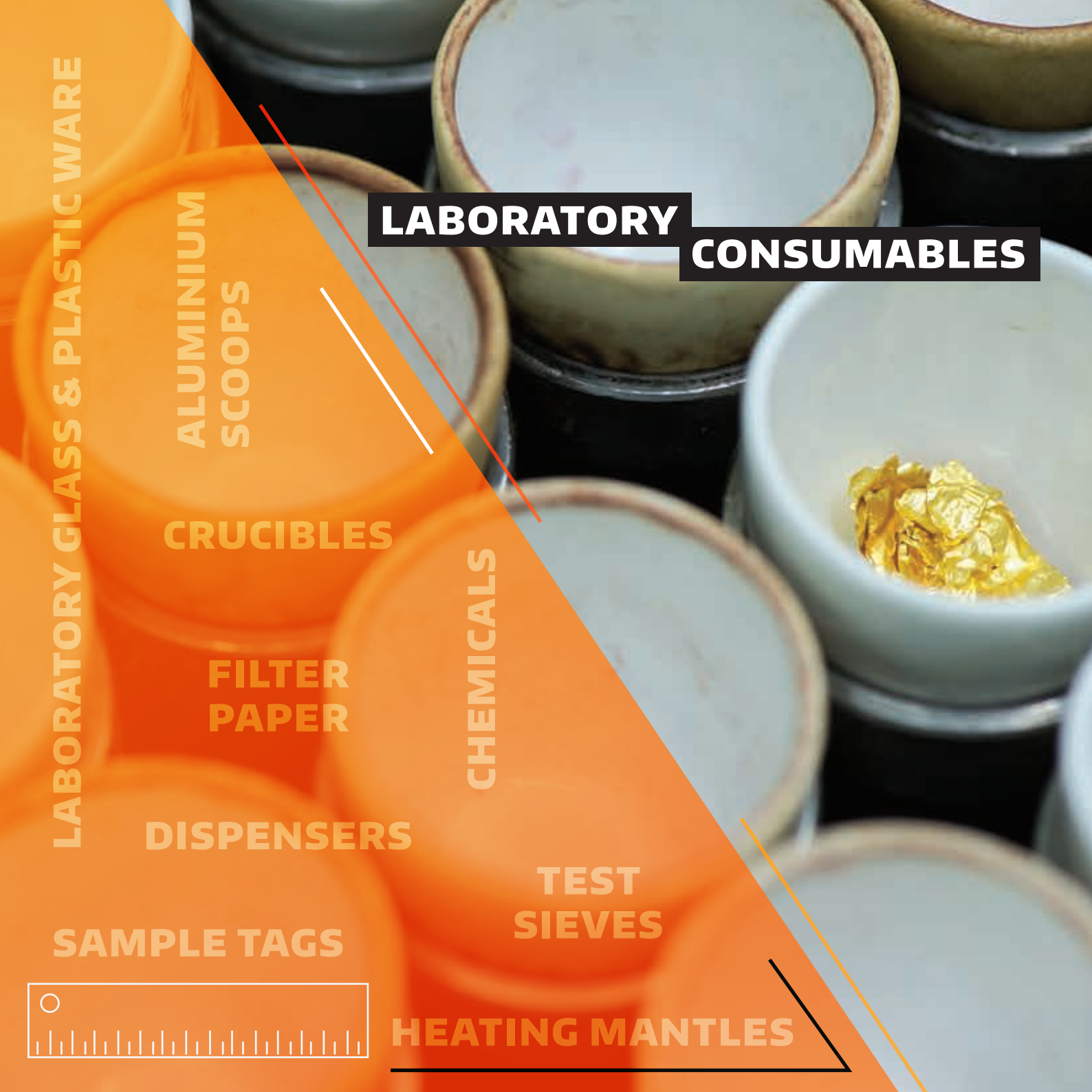
**LABORATORY**

**CONSUMABLES**

**CHEMICALS**

**TEST  
SIEVES**

**HEATING MANTLES**



## FILTER PAPER

Filter paper ranges from small laboratory uses, through to large diameter wet strength for heavy filtration uses In filter presses or plate-type filter presses. Our most common grades are as follows:

- 609 W/S – Retention Size 10um (Generally used for Filter Press Applications)
- F60 – Retention Size 25um
- 500AWS – Retention Size 6um
- These can be cut or folded to your exact specifications or needs.



We also offer a large range of Glass Fibre, Cellulose Nitrate, Cellulose Acetate and Ashless papers for laboratory uses.

## GLASS & PLASTIC WARE

We offer a full range of glass and plastic ware for laboratories, please scan the QR code below or visit our website to download the full list of consumables.



## CRUCIBLES

Types Available:

- Ceramic
- Nickel
- Platinum
- Porcelain
- Silica
- Zirconium



## ADDITIONAL PRODUCT LIST

- AA Lamps
- Aluminium Scoops
- Benchtop Timers
- Centrifuges
- Chemicals – Lab
- Clamps
- Cleaning Brushes
- Colorimeters
- Digital Thermometers
  - Contact
  - Infrared
- Dispensers
- Flocculators
- Flotation Equipment
- Glass blowing services
- Glassware Washer
- Handheld and Benchtop Meters
  - PH/Con/DO/TDS/Temp/Mv
- Heating Mantles
- Hydrometers
- Incubators
- Laboratory Consumables and Hardware
- Laboratory Trolleys
- Magnetic Stirrer bars
- Microscopes
- Overhead Stirrers
- Sample Tags
- Spatulas and Tongs
- Stirrers, Mixers and Blenders
- Titrators
- Vacuum Pumps
- Viscometers
- Vortex Mixer
- Waterbaths
- Waterstills



Test Sieves - 100, 200, 300 and 450mm



# SAFETY EQUIPMENT

ALUMINISED COAT

ALUMINISED APRON

KEVLAR MITTS

ALUMINISED GLOVES

EYE WASH STATIONS

GOLD FACE SHIELD

SAFETY SHOWERS





## SAFETY SHOWERS

- Floor mounted or free standing
- Platform operated
- Epoxy coated Mild Steel or Stainless Steel
- Independent hand operated eyewash
- Overhead water rose or nozzle
- Stainless steel eyewash bowl with soft flow aerated nozzle
- Multiple body nozzles
- Ideal for plants, tank farms, in or outdoors



## EYEWASH STATION

- Wall mounted
- Steel and PVC Construction
- Soft flow aerated nozzles (angled)
- Drain connection
- Hand operated
- Ideal for laboratories and confined spaces



## SPILL KITS

We supply Oil, Diesel and Chemical Spill Kits in a wide variety of options. All spill kits are supplied with full MSDS and Spec Sheets.

### 240 WHEELIE KITS:

- Universal Spill Kit - Multi-Use (Absorbs 120 Litres)
- Ideal for Oils, Diesels, Hydraulic Oil and non-aggressive chemicals

### ACID SPILL KITS:

- Used for Aggressive Chemicals Eg. Sulphuric Acid

### PORTABLE SPILL KITS:

- Universal/Multi-Use



## FURNACE PPE

- Aluminised Gloves
- Aluminised Coat
- Aluminised Apron Knee Length
- Aluminised Overboots
- Aluminised Knee Length Spats
- Oberon 24k Gold Face shield
- Kevlar Mitts
- 100% Cotton Balaclava Shoulder Length



## ADDITIONAL PRODUCT LIST

- Blue Nitrile Gloves
- Dust Coats
- Dust Masks
- Green Nitrile Gloves
- Latex Gloves
- Overalls
- Reflective Clothing
- Respirator - Single or Double Cartridge
- Safety Signage



**CONTAINER LABS**

**LABORATORY  
DESIGN**

**SUPPLY OF ALL  
CONSUMABLES**

**BUILDING  
CONSULTATION**

**ON-SITE TRAINING**



**INSTALLATIONS**

**TURNKEY  
PROJECTS**

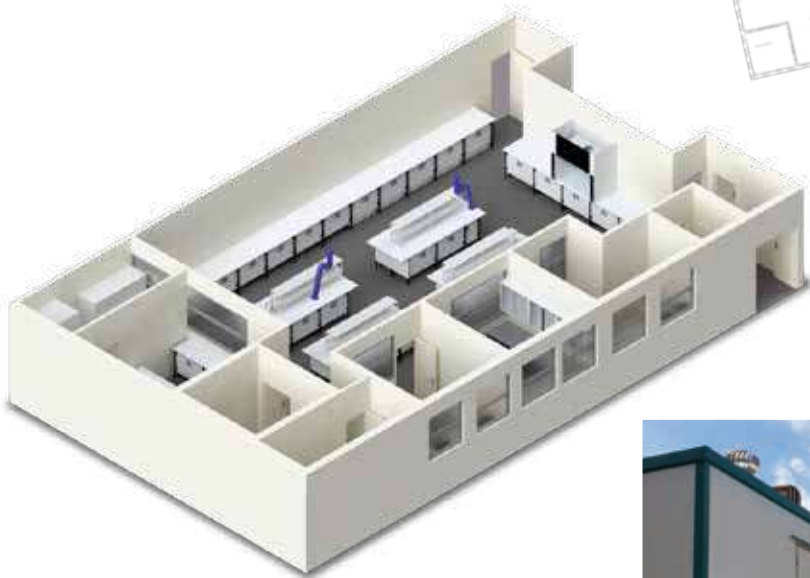


# TURNKEY PROJECTS

Full turnkey solutions for new laboratory setups. Working either through project houses or directly with the client to provide a final stage laboratory, operation-ready.

## PROJECT WOULD INCLUDE:

- Design and layout services
- Building consultation services, enabling efficient workflow
- Supply and installation of all equipment & furniture needed
- Supply of all consumables
- On-site training courses tailored to each and every project.



# MIT-GROUP

MINERAL INNOVATIVE TECHNOLOGIES



LABORATORY  
EQUIPMENT

TURNKEY  
PROJECTS

SAMPLING

METALLURGICAL

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website: [www.m-i-t.co.za](http://www.m-i-t.co.za)

