

# MS - 3031

## Microwave Synthesizer System



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**Analytical Technologies Limited**

An ISO 9001 Certified Company

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MS-3031, a Fully Indigenised Scientific Microwave Synthesis System, replaces conventional techniques. Ideal for R & D labs running low volume applications.

The system consists of 1.1 cub. ft. capacity with a powerful 700 watts / 2450 MHz Microwave Oven With digestion vessels & glassware to suit sample-preparation requirements.

### ►► Applications :

For any application MS-3031, can be configured accordingly. It can safely and conveniently be used for the following applications :

- |                     |                                |                               |
|---------------------|--------------------------------|-------------------------------|
| ► Kjeldahl Nitrogen | ► Evaporation                  | ► Digestion ( Open / Closed ) |
| ► Drying            | ► Extraction ( Open / Closed ) |                               |
| ► Hydrolysis        | ► Synthesis ( Open / Closed )  |                               |

### ►► Advantages :

- Speed : Reaction rate increases 10-1000 times.
- Yields : Increases 10-30% on an average.
- Selectivity : Cleaner Chemistry simplifies post reaction work -up.
- Green Chemistry : Reduced solvent usage creates less waste.
- Reaction Quenching : Minimizes side reactions.
- Microwave heating is specific and instantaneous, useful for the solvent-free reactions.
- A wide range of selective functional group transformations can be accomplished.
- It is environmentally friendly and serves the purpose of protecting human health and environment, without compromising viability and speed.
- One of the thrust areas is to explore alternative reaction conditions and media to accomplish the desired transformations with minimum by products or waste as well as eliminating use of conventional organic solvents, if possible.
- Thus, Microwave induced Organic Reaction Enhancement ( MORE ) has emerged as a simple, clean, fast, economic, environmental and non-traditional method for the synthesis of a large number of organic molecules. as well as the Synthesis of drugs, intermediates and chemicals.

### ►► Safety Features :

- Microwave Choke Systems with triple safety interlocks.
- Heat resistant door.
- Close indicator for added safety.
- Powerful Exhaust system.

### ►► Beam Reflector System :

MS-3031 Comes with the perfect distribution of microwaves with a special Microwave Beam Reflector device. It is design to rotate the flow of microwaves within the system, which gives uniform and all round heating. Beam Reflector also makes the waves reach every corner of she system, enabling optimum process place utilisation.

## ►► Specifications:

Capacity:	34 Litre (1.1 cubic ft.)
Power:	1500 Watts (2450 MHz).
Control Panel:	Automatic soft touch Electronic with 99.59-minute timer, adjustable during running.
Power levels:	10 (300W to 1500W)
Stirrer:	Magnetic Stirrer with selectable speeds (up to 1200 RPM) adjustable during running.

## ►► Reflux Condensers with gas inverter:

- Microwave delivery power: Max. 1.5 kW
- Processing samples: Biomass and waste plastics and waste food (solid samples)
- Sample Mass 500gm to 1000gm
- Maximum operating temperature: up to 1200C
- Temperature controls up to 1200C.
- Provision for mixing the samples and vapors collection outside the reactor
- Provision for gas injection to the sample (Inert Nitrogen\ Gas, steam, co<sub>2</sub>)

## Regulatory compliances



## Corporate Social Responsibility

Analytical Foundation is a nonprofit organization (NGO) found for the purpose of:



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1. Research & Innovation Scientist's awards/QC Professional Award : Quality life is possible by innovation only and the innovation is possible by research only, hence ANALYTICAL FOUNDATION is committed to identify such personalities for their contributions across various field of Science and Technology and awarding them yearly. To participate for award, send us your details of research / testing / publication at [Info@analyticalfoundation.org](mailto:Info@analyticalfoundation.org)

2. Improving quality of life by offering YOGA Training courses, Work shops/Seminars etc.

3. ANALYTICAL FOUNDATION aims to DETOXYFY human minds,souls and body by means of yoga, Meditation, Ayurveda, Health Care, Awards, Media, Events, Camps etc.

## Reach us @



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