



# Advanced, total solution burner development for the gas appliance industry.

## **New Product**

### CUSTOM TECHNOLOGY DEVELOPMENT

- Evaluation of requirements and objectives to recommend optimal designs, materials and production optimization
- Concepting, prototyping, testing, and performance evaluation
- Design, development and manufacture of appliance main components, including burners, heat exchangers, air/gas delivery, and ignition systems

## **Existing Product**

### COST REDUCTION AND PERFORMANCE IMPROVEMENT

- Evaluation of existing products and components to reduce cost and improve performance and efficiency
- Burner redesign and manufacture
- Low NOx, high efficiency burner technology
- Modulation implementation
- Heat exchanger efficiency improvements
- Ignition system, gas/air delivery system update and improvement

## **ITS**

### TECHNICAL SUPPORT AND RESPONSIVE SERVICE

- Strict customer confidentiality
- State-of-the-art methodologies and technologies
- 100+ years of collective experience in product development
- Proven management
- Established international contacts
- Access to numerous OEM suppliers and objective field experts
- Component sourcing
- Competitive pricing and prototyping capabilities
- Cost conscious manufacturing
- Agency requirements and certifications
- Environmental and energy demands, regulations, and compliance
- 20 U.S. and international patents
- North American quality delivered quickly.

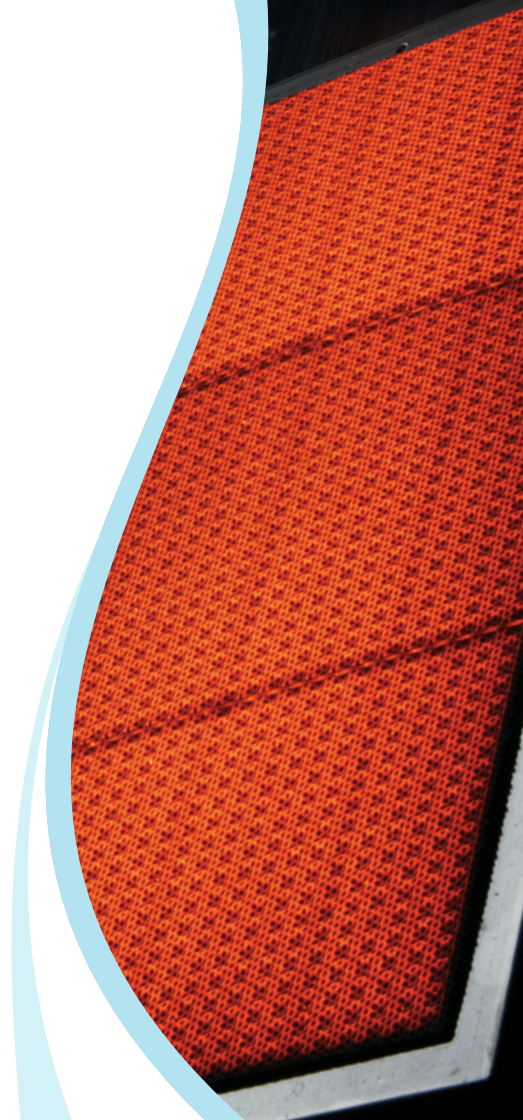


# Ceramic Tile Burners

iTS ceramic tile burners deliver consistent flame characteristics, high heat flux, exceptional performance and long life at low cost. Extensive experience and technical expertise in advanced ceramic technology makes iTS the only burner manufacturer in North America that designs and manufactures its own ceramic plaques. This combination of expertise in combustion technology and flexibility in ceramic design provides custom design burners for any specific application.

## ADVANTAGES

- Low cost
- High durability
- Formed using mullite and cordierite material
- Low thermal conductivity for optimum combustion performance
- Precisely controlled open area, material density and porosities to achieve maximum performance
- Different surface patterns provide maximum heat absorption to increase efficiency
- Cordierite material stands up well against mechanical and thermal shock
- Quick heat up and consistent, even glow over the entire heating surface

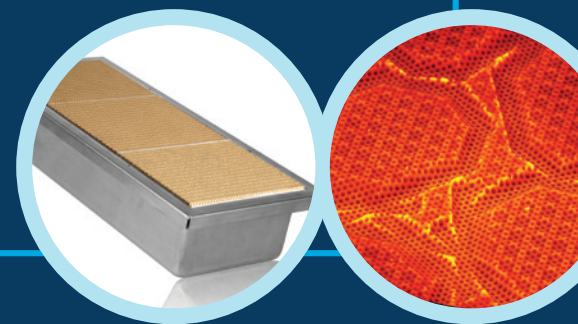


## APPLICATIONS

- Barbecues
- Broilers
- Pizza ovens
- Steak cookers
- Fireplaces
- Convection ovens
- Griddles
- Hold ovens
- Fryers
- Dishwashers
- Furnaces
- Ranges
- Boilers
- Hot water heaters
- Bake ovens
- Rotisserie ovens
- Evaporators

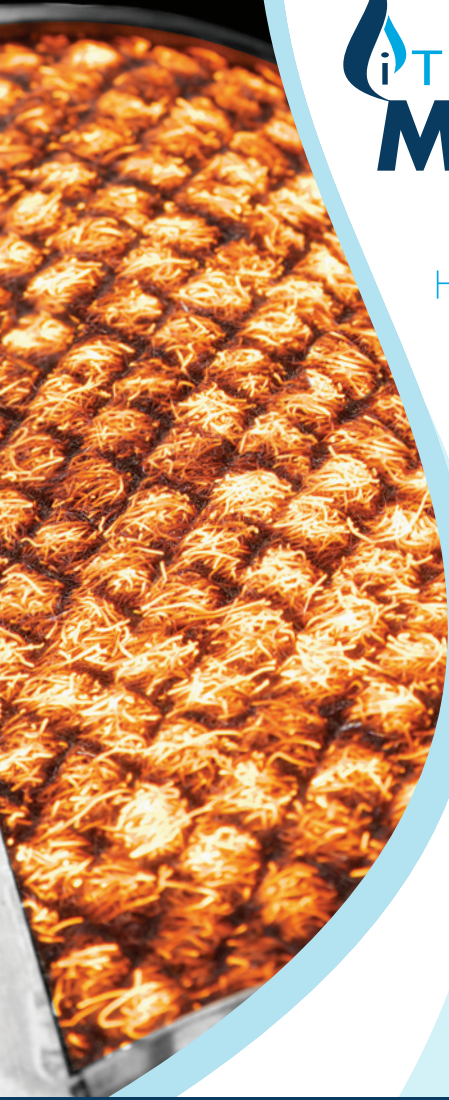
## SPECIFICATIONS

- Firing rate of 150 to 500 BTUH/sq inch (depending on the application)
- Operation mode: Infrared
- Low cost
- Custom radiant surface configurations available
- Low emissions of NO<sub>x</sub> and other pollutants
- Internal baffles for distribution





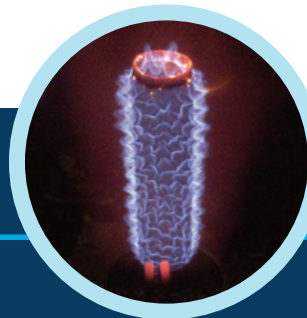
# Metal Fibre Burners



High-temperature-resistant Fecralloy fibres (alloy of Fe-Ni-Al) and other heat-resistant metal alloy fibres are made into a matrix where the small openings act as pores or voids allowing the passage of a gas and air mixture. The material is then made into various geometrical shapes to form a combustion surface to best fit the particular application. The integrity of the material is well maintained after burning and exposure to high heat.

## ADVANTAGES

- High durability
- Long temperature life
- Greater oxidation resistance and form stability
- Perforated substrate provides even flow uniformity across the burner
- Ten to 1 turndown makes these burners suitable for a variety of applications



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- Furnaces
- Ranges
- Boilers
- Hot water heaters
- Bake ovens
- Rotisserie ovens
- Evaporators

## SPECIFICATIONS

- Firing rate of 350 to 5000 BTUH/sq inch (depending on the application)
- Operation mode: Infrared
- Moderate heat up and cool down
- Flat, semi-flat (dome) and semi-cylindrical shapes available
- Low emissions of NO<sub>x</sub> and other pollutants
- Perforated substrate for distribution



# Wire Mesh

Wire mesh is versatile and durable, yet an inexpensive choice for combustion surfaces. The precisely controlled weaving process creates maximum uniformity over the entire burning surface. Wire mesh burners are ideal for applications where the burner surface is exposed to occasional water or oil splatter, such as cooking applications. Wire mesh burners are usually made of stainless steel or inconel wires. iTS's wire mesh burners are, however, made of special high-temperature alloys, which increase the operating temperature far beyond standard burners. In addition, the corrosion resistance capability of these alloys is ideal for those applications where corrosive environments limit the use of standard burners.

## ADVANTAGES

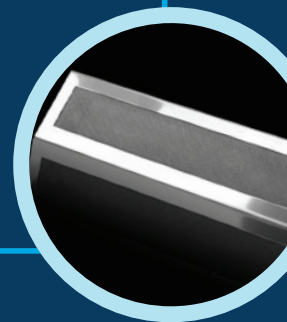
- High durability
- Superior flexibility permits a variety of shapes and forms
- Suitable for applications requiring uncommon shapes or geometrical forms often used to match the geometrical shapes of the surfaces being heated
- Non-flat shapes such as dome or semi-cylindrical shapes, which are typical of wire mesh combustion surfaces

## APPLICATIONS

- Barbecues
- Broilers
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- Hold ovens
- Fryers
- Dishwashers
- Furnaces
- Ranges
- Boilers
- Hot water heaters
- Bake ovens
- Rotisserie ovens
- Evaporators

## SPECIFICATIONS

- Firing rate of 150 to 400 BTUH/sq inch (depending on the application)
- Operation mode: Infrared
- Low cost
- Flat, semi-flat and semi-cylindrical shapes available
- Low emissions of NO<sub>x</sub> and other pollutants
- Internal baffles for distribution



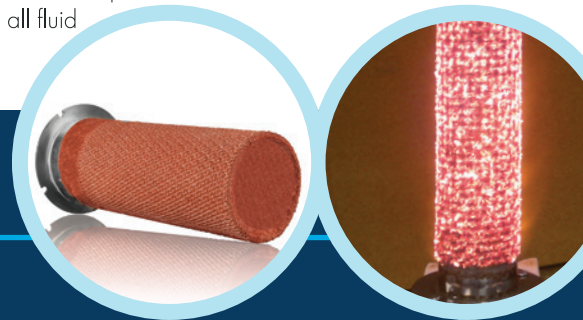


# Woven Ceramic Matrix

Born in NASA's shuttle research program, this unique ceramic fibre is designed to withstand the heat generated from the orbit re-entry of the shuttle. The alumina-based ceramic fibre is made into thread and woven into a ceramic matrix fabric to form one of the most advanced combustion surfaces for burners. The voids created in the weaving process act the same as the holes in ceramic tiles or openings in wire mesh burners. The precision-controlled weaving process provides an extremely uniform burning area without a need for internal diffusion plates or baffles. Flexibility of ceramic fibre provides second-to-none thermal and mechanical shock resistance for these burners.

## ADVANTAGES

- At a melting temperature of 3200°F, the iTS's WCM burners are indestructible
- Heat loading of over 7000 BTUH/hr sq inch down to 400 BTUH/hr sq inch provides a turn down of more than 17 to one in some applications
- The WCM burners are a perfect combination of wire mesh and ceramic tile burners; combining the superb characteristics of ceramics such as low thermal conductivity and high temperature resistance, with the flexibility and durability of wire mesh
- WCM burners are available in a variety of geometrical shapes, including cylindrical burners, which are ideal for all fluid immersion heating (boilers, fryers, water heaters)



## APPLICATIONS

- Bake ovens
- Boilers
- Broilers
- Convection ovens
- Dishwashers
- Evaporators
- Fryers
- Furnaces
- Griddles
- Hold ovens
- Hot water heaters
- Pizza ovens
- Ranges
- Rotisserie ovens
- Steak cookers

## SPECIFICATIONS

- Firing rate of 350 to 7000 BTUH/sq inch (depending on the application)
- Operation mode: Infrared and blue flame
- Rapid heat up and cool down
- Available in flat, semi-flat (dome), semi-cylindrical and cylindrical shapes
- Low emissions of NO<sub>x</sub> and other pollutants
- No substrate or baffles for distribution required



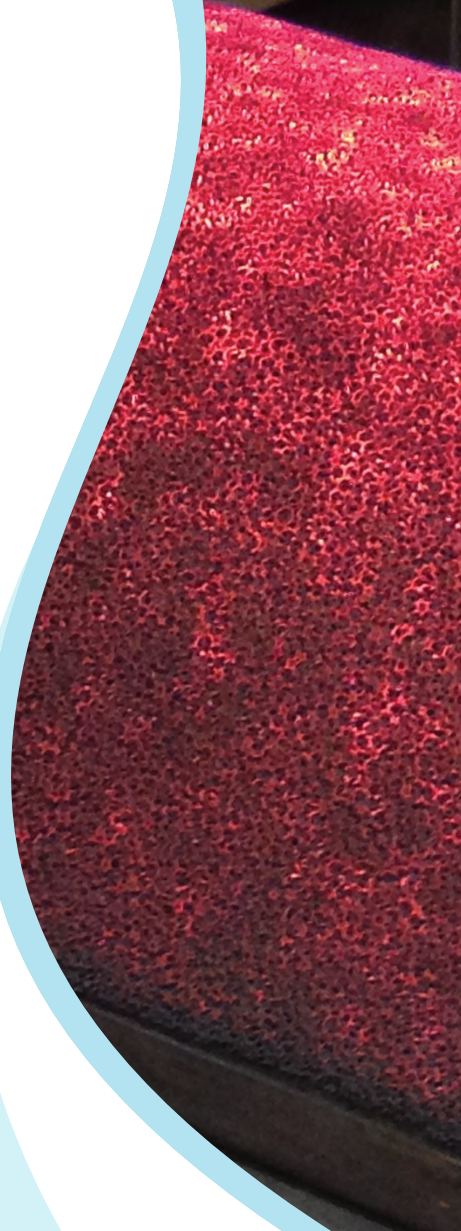
# Metal Alloy Foam

NiCrAl metal alloy foam is innovation in action, preventing pollution and providing emission control solutions that deliver reliable performance and fuel economy with full regulatory compliance. NiCrAl metal alloy foam has a 3D matrix structure that continually disrupts and distorts the flow path, producing exceptional mixing that enhances the accessibility of the reactants, products and heat to and from the surface.

Flat or shaped, corrugated or rolled, NiCrAl metal alloy foam can be used to create structures to fit any burner design while allowing for far higher productivity, reduced energy usage, better heat management, less hot spots, longer life time, and lower greenhouse gas emissions.

## ADVANTAGES

- Superior heat & mass transfer
- Superior selectivity & productivity levels
- Maximum catalyst lifecycle
- High surface area
- High catalytic pore diffusion
- High corrosion resistance
- High mechanical strength
- Enhanced efficiency
- Enhanced durability
- Reduced energy consumption
- Reduced downtime with longer service intervals
- Easier, more predictable and less costly maintenance

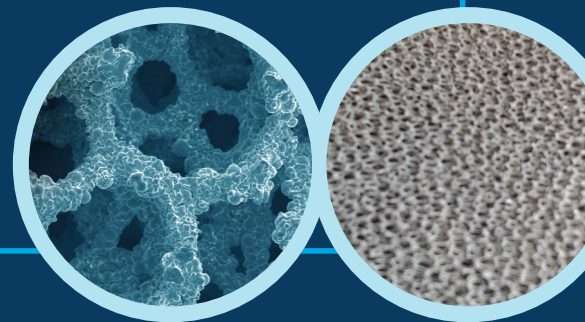


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## SPECIFICATIONS

- Low emissions of NO<sub>x</sub> and other pollutants
- Custom radiant surface configurations available
- Available in flat, semi-flat (dome), semi-cylindrical & cylindrical shapes.





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