

## M 99<sup>®</sup> --Ceramic Catalyst Carrier

### ■ Application :

In heterogeneous catalysis, bulk material catalysts are used to convert gaseous or liquid reactants. On an industrial scale, fixed bed reactors are generally used for these types of reactions. The actual catalyst–i.e. the active catalytic substance–may be used alone or on a carrier. Carriers are used in situations where high demands are placed on the mechanical strength of the catalyst, the active catalytic substance must be present in a thin layer or there is a need to conserve valuable catalyst substances. A variety of materials are used to create catalyst carriers, during which ceramic catalyst carriers are an important group of carrier materials in heterogeneous catalysis

### ■ Chemical Composition

Al <sub>2</sub> O <sub>3</sub>	SiO <sub>2</sub>	Fe <sub>2</sub> O <sub>3</sub>	CaO	MgO	TiO <sub>2</sub>	Na <sub>2</sub> O	K <sub>2</sub> O
>99%	<0.2%	<0.12%	<0.1%	<0.1%	< 0.06%	<0.2%	<0.2%

### ■ Physical Properties:

Size(mm)	Shape	Water Absorption	Compressive Strength (KN)	Color
16x10x7	Seraphim Ring	13%-16%	>0.4	White
16x16x7	Seraphim Ring	13%-16%	>0.5	White
38x38x14	Seraphim Ring	13%-16%	>4	White
25x25x4.5	Seraphim Ring with 4 holes	16%-20%	>1.65	White
31x31x5	Seraphim Ring with 4 holes	16%-20%	>1.7	White
80x85x35	Multi-wing ring	13%-16%	>6	White

### ■ Advantages:

- Chemical inertness
- Mechanical strength and stability
- Low surface profile
- Bulk material uniformity

### ■ Regular Size (mm):

Remark: Other sizes and shapes are available upon requests.

### ■ Packaging:

By standard woven bag, other package like steel drum, jumbo-bag etc are available upon requests.





### Standard Quality Control Testing Method

#### ■ Shape and Size:

This test verifies the uniformity of the balls' shape and size that could affect the distribution of flow. Uniform and consistent flow distribution is necessary to sustain the appropriate reaction

#### ■ Water Absorption:

This test determines the porosity of the balls.

#### ■ Drop Test:

This test verifies the structural integrity of the balls in order to prevent breakage during installation or bed loading, which can lead to clogging resulting in pressure drop increase.

#### ■ Crush Strength:

This test ensures that the balls are of a homogeneous material and are free of mechanical defects which can lead to bed failure during operation.



#### ■ Additional Test :

Chemical Analysis

Thermal shock crush strength test

Leachable Iron

And other test upon customer's request