CERAMIC
MASS TRANSFER PRODUCT RANGE

PALL CHEM

SPECIALISING IN THE SUPPLY OF TOWER PACKING IN MASS TRANSFER EQUIPMENT

Pallchem specialises in the manufacture and supply of ceramic, plastic and metal mass transfer media for absorption, stripping, scrubbing and distillation processes used by mechanical, biological and chemical plants. We are a privately owned South African company managed by Stanton Global and associated with PIMMS Group, a leading plastics manufacturer. In addition to our high-quality ceramic packing, Pallchem also manufactures plastic random packings locally in South Africa, ensuring fast delivery & reliable support for a wide range of mass transfer needs.

TALK TO US ABOUT YOUR PACKING NEEDS

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CERAMIC PALL RINGS

BUILT ON PROVEN PRINCIPLES. REFINED FOR PERFORMANCE.

Ceramic Pall Rings are an enhanced evolution of the traditional Raschig Ring, engineered to improve mass transfer performance through a unique open-wall structure featuring internal tabs.

Offering exceptional thermal and chemical resistance, low fouling tendencies, and excellent mechanical strength, Ceramic Pall Rings are ideal for high-demand applications in corrosive and high-temperature environments.

PHYSICAL AND CHEMICAL PROPERTIES	
PROPERTY	**VALUE / DESCRIPTION**
Material	High-purity ceramic
Crush Strength	>13 MPa
Water Absorption	< 0.5%
Thermal Stability	Up to 1000°C
Chemical Resistance	Excellent (acids, solvents); moderate alkali resistance
Flame Resistance	Non-flammable / fireproof
Toxicity	Non-toxic, environmentally safe

PRODUCT FEATURES & PERFORMANCE BENEFITS

- **Open-Lattice Design:** Enhanced surface area and internal flow paths for superior mass transfer.
- **Low Pressure Drop:** The open structure minimizes flow resistance, reducing energy consumption.
- **High Void Fraction:** Improves gas-liquid distribution and decreases risk of channeling or flooding.
- **Acid & Solvent Resistance:** Suitable for aggressive chemical environments.
- **Thermal Stability:** Maintains integrity under extreme heat and cyclic operations.
- **Mechanically Robust:** Resists cracking and abrasion during packing and operation.
- **Eco-Safe Composition:** Made from natural ceramic materials; recyclable and non-toxic.

APPLICATIONS : DEAL FOR USE IN

- Distillation and Fractionation Columns
- Gas Scrubbers and Absorbers
- Chemical Reactors and Gas Cooling Towers
- Stripping Units and Biofilters
- Heat Recovery Systems

INDUSTRIES INCLUDE

Petrochemical • Environmental • Fertilizer • Pulp & Paper • Chemical Processing • Mining & Metallurgy

AVAILABLE SIZES AND SPECIFICATIONS			
SIZES (mm)	**SURFACE AREA (m2/m3)**	**FREE SPACE (%)**	**BULK DENSITY (kg/m3)**
25 x 25	210	73	600
38 x 38	180	75	580
50 x 50	130	78	560
80 x 80	110	81	530

CERAMIC RASCHIG RINGS

DURABLE HIGH PERFORMANCE PACKING FOR TOUGH INDUSTRIAL APPLICATIONS.

Ceramic Raschig Rings offer outstanding resistance to acids and high temperatures. They withstand corrosion from a wide range of inorganic acids, organic acids and organic solvents - excluding hydrofluoric acid - and are suitable for use in both high and low temperature environments.

PHYSICAL AND CHEMICAL PROPERTIES

PROPERTY	VALUE / DESCRIPTION
Material	High-purity ceramic
Bulk Density	~850–1000 kg/m^3 (varies with size)
Void Fraction	> 73%
Crush Strength	> 13 MPa (varies with size and composition)
Water Absorption	< 0.5%
Thermal Stability	Up to 1000°C continuous (no thermal degradation)
Acid Resistance	Excellent – resistant to most acids including H_2SO_4, HCl
Alkali Resistance	Moderate – not recommended for strong alkalis
Flame Resistance	Non-flammable / fireproof
Toxicity	Non-toxic, environmentally safe

PRODUCT FEATURES & PERFORMANCE BENEFITS

- Made from durable corrosion-resistant ceramic materials.
- Resistant to a wide range of acids, solvents & high temperatures.
- Cost effective.
- High mass transfer improvement & separation efficiency.
- Designed for long-lasting performance and can withstand harsh conditions.

APPLICATIONS

- **DISTILLATION:** Used in chemical and petrochemical plants for separating liquid mixtures at high temperatures.
- **ABSORPTION:** Ideal for gas scrubbing and absorbing harmful gases in environmental systems.
- **STRIPPING:** Removes volatile components from liquids in wastewater treatment.
- **DRYING:** Efficient for moisture removal in chemical production.
- **HEAT EXCHANGE:** Withstands thermal shock in heat transfer systems.
- **CHLOR-ALKALI INDUSTRY:** Perfect for use in chlorine gas drying and corrosive processes.
- **SULFURIC ACID PLANTS:** Resistant to acid in concentration towers and absorption systems.

AVAILABLE SIZES AND SPECIFICATIONS

SIZES (mm)	THICKNESS (mm)	SURFACE AREA (m2/m3)	FREE SPACE (%)	NUMBER PER m3	BULK DENSITY (kg/m3)	PACKING FACTOR (m-1)
6 x 6	1.6	712	62	3022935	1050	5249
13 x 13	2.4	367	64	377867	800	1903
16 x 16	2.5	305	73	192500	800	900
19 x 19	2.8	243	72	109122	750	837
25 x 25	3.0	190	74	52000	650	508

CERAMIC INTALOX SADDLES

Engineered for Tough Columns. Built to Perform.
Optimise Your Column. Outperform the Competition.
From 10 mm to 76 mm, we supply precision-engineered saddles which reduce pressure drop, maximise contact efficiency, and last longer in extreme process conditions. Known for excellent thermal shock resistance for stable performance under dynamic loads and let's not forget their long service life which reduces maintenance and downtime.

PHYSICAL AND CHEMICAL PROPERTIES	
PROPERTY	**VALUE / DESCRIPTION**
Material	High-purity ceramic
Bulk Density	~850–1000 kg/m^3 (varies with size)
Void Fraction	> 73%
Crush Strength	> 13 MPa (varies with size and composition)
Water Absorption	< 0.5%
Thermal Stability	Up to 1000°C continuous (no thermal degradation)
Acid Resistance	Excellent – resistant to most acids including H_2SO_4, HCl
Alkali Resistance	Moderate – not recommended for strong alkalis
Flame Resistance	Non-flammable / fireproof
Toxicity	Non-toxic, environmentally safe

PRODUCT FEATURES & PERFORMANCE BENEFITS

- **Engineered Saddle Design:** Maximises surface area and improves gas-liquid contact for enhanced mass transfer efficiency.
- **High Thermal & Chemical Resistance:** Withstands extreme temperatures and corrosive environments — ideal for harsh process conditions.
- **Low Pressure Drop:** High void fraction ensures efficient flow with minimal energy loss across packed columns.
- **Superior Mechanical Strength:** Reduces breakage during loading and operation, ensuring longer service life and minimal maintenance.
- **Eco-Friendly & Non-Toxic:** Made from natural ceramic materials — recyclable, safe, and aligned with sustainable industry goals.

APPLICATIONS : IDEAL FOR USE IN

Absorbers • Strippers • Scrubbers • Distillation Towers • Drying Towers • Thermal and chemical processing systems.

INDUSTRIES INCLUDE

Petrochemical, Chemical, Refining, Fertilizer, Steel, and Mining

AVAILABLE SIZES AND SPECIFICATIONS			
SIZES (mm)	**SURFACE AREA (m2/m3)**	**FREE SPACE (%)**	**BULK DENSITY (kg/m3)**
10 x 10	825	63	900
13 x 13	647	68	780
16 x 16	535	71	700
19 x 19	350	75	670
25 x 25	254	77	650
38 x 38	180	80	580
51 x 51	120	79	550
76 x 76	91	75	530

CERAMIC SUPER SADDLES

Ceramic Super Saddles are next-generation random packing designed to deliver maximum mass transfer efficiency with minimal pressure drop. Their improved shape over traditional saddles ensures better gas-liquid distribution, reduced resistance, and higher mechanical strength. Ideal for demanding process conditions, Ceramic Super Saddles offer exceptional thermal and chemical stability, making them the preferred choice for modern packed bed towers in chemical, petrochemical, and environmental industries.

PHYSICAL AND CHEMICAL PROPERTIES	
PROPERTY	**VALUE / DESCRIPTION**
Material	High-purity ceramic
Crush Strength	⩾ 13 MPa (varies with size and composition)
Water Absorption	< 0.5%
Thermal Stability	Up to 1000°C
Chemical Resistance	Excellent against acids (H_2SO_4, HNO_3, HCl); moderate against alkalis
Flame Resistance	Non-flammable / fireproof
Toxicity	Non-toxic & environmentally friendly

PRODUCT FEATURES & PERFORMANCE BENEFITS

- **Enhanced Saddle Design:** Optimized for high liquid film spread and low pressure drop.
- **Superior Chemical & Thermal Resistance:** Handles aggressive process environments and extreme heat with ease.
- **High Mechanical Strength:** Reduced breakage and longer operational lifespan.
- **Efficient Gas-Liquid Contact:** Maximizes mass transfer and minimizes energy use.
- **Environmentally Friendly:** Inert, recyclable ceramic with long service life.

APPLICATIONS : IDEAL FOR USE IN

- Absorption Columns (e.g. acid gas removal), Scrubbers (wet and dry)
- Distillation & Fractionation Towers, Stripping Columns
- Drying Towers, Heat Recovery Systems

INDUSTRIES SERVED:

Chemical • Petrochemical • Fertilizer • Steel • Power Generation • Water Treatment • Environmental Control

AVAILABLE SIZES AND SPECIFICATIONS			
SIZES (mm)	**SURFACE AREA (m2/m3)**	**FREE SPACE (%)**	**BULK DENSITY (kg/m3)**
25 x 25	260	77	650
38 x 38	210	80	580
51 x 51	140	79	550
76 x 76	105	75	530

CERAMIC CROSS PARTITION RINGS

Ceramic Cross Partition Rings are precision-engineered random packing elements, designed to offer high mechanical strength, superior thermal stability, and efficient gas-liquid contact. Their unique cross-partitioned internal structure ensures improved distribution and lower pressure drop compared to traditional ring-type packings.
With excellent acid resistance and minimal fouling, they are ideal for corrosive and high-temperature applications across a wide range of industries. Built to last. Designed to perform.

PHYSICAL AND CHEMICAL PROPERTIES	
PROPERTY	**VALUE / DESCRIPTION**
Material	High-purity ceramic
Crush Strength	>13 MPa
Water Absorption	< 0.5%
Thermal Stability	Up to 1000°C
Chemical Resistance	Excellent (acids, solvents); moderate alkali resistance
Flame Resistance	Non-flammable / fireproof
Toxicity	Non-toxic and inert

PRODUCT FEATURES & PERFORMANCE BENEFITS

- **Cross-Partition Design:** Promotes uniform gas and liquid flow, enhancing mass transfer efficiency.
- **High Open Area:** Low pressure drop and reduced risk of flooding in packed towers.
- **Excellent Corrosion Resistance:** Inert to acids and solvents; ideal for corrosive media.
- **Superior Thermal Stability:** Operates reliably under high-temperature process conditions.
- **High Strength, Low Breakage:** Durable during installation and cycling, with long service life.
- **Environmentally Friendly:** Natural ceramic, recyclable and safe for high-integrity operations.

APPLICATIONS

- Scrubbers and Absorbers
- Stripping & Distillation Towers
- Gas Cooling & Drying Units
- Chemical reactors
- Waste Gas Treatment systems

INDUSTRIES SERVED

Petrochemical • Fertilizer • Mining • Refining • Chemical Manufacturing • Environmental Control

AVAILABLE SIZES AND SPECIFICATIONS			
SIZES (mm)	**SURFACE AREA (m2/m3)**	**FREE SPACE (%)**	**BULK DENSITY (kg/m3)**
51 x 51	260	77	650
76 x 76	210	80	600
102 x 102	140	79	550
127 x 127	105	77	530

INERT CERAMIC BALLS RP-19

RP-19 Inert Ceramic Balls are high-purity alumino-silicate support media designed for catalyst bed support, column packing, and heat distribution in fixed-bed processes. These balls provide excellent mechanical strength and chemical resistance, making them ideal for harsh industrial environments.

PHYSICAL AND CHEMICAL PROPERTIES	
PROPERTY	**VALUE / DESCRIPTION**
Material	Inert alumino-silicate ceramic
Bulk Density	~1350–1450 kg/m^3
Crush Strength	>10 MPa (varies by size)
Water Absorption	< 0.5%
Thermal Stability	Up to 1350°C
Acid Resistance	Excellent
Alkali Resistance	Good
Porosity	Low (dense structure)
Toxicity	Non-toxic / inert

PRODUCT FEATURES & PERFORMANCE BENEFITS

- **Excellent Mechanical Strength** - Withstands loading and thermal cycling without cracking or degradation.
- **High Thermal Stability** - Designed for high-temperature fixed-bed reactors and gas processing units.
- **Chemically Inert** - Compatible with most process media including acids, gases, and hydrocarbons.
- **Uniform Shape & Size** - Promotes stable bed structure and consistent flow distribution.
- **Low Porosity** - Minimizes risk of contamination or reactivity with process fluids.

APPLICATIONS : DEAL FOR USE IN

- Catalyst bed support, Adsorbent and desiccant bed layering.
- Distribution and hold-down layers in packed towers, Steam reforming and hydrogenation units.
- Refining and petrochemical processing.

INDUSTRIES SERVED

Petrochemical • Refining • Fertilizer • Gas Processing • Chemical Manufacturing

AVAILABLE SIZES AND SPECIFICATIONS			
SIZES (mm)	**SURFACE AREA (m2/m3)**	**FREE SPACE (%)**	**BULK DENSITY (kg/m3)**
3 x3	145	50	600
6 x 6	210	56	820
10 x 10	110	53	860
13 x 13	75	55	980
19 x 19	60	58	980
25 x 25	60	58	980
38 x 38	60	58	980
50 x 50	60	58	980

INERT CERAMIC BALLS RP-20

RP-20 Inert Ceramic Balls are high-alumina, ultra-low-porosity support media designed for severe service applications that demand superior thermal resistance and mechanical integrity. With an even higher crush strength than RP-19, RP-20 is built for critical processes under intense mechanical and thermal stress.
Ideal for high-performance catalyst beds and environments involving high flow rates and aggressive chemical exposure.

PHYSICAL AND CHEMICAL PROPERTIES	
PROPERTY	**VALUE / DESCRIPTION**
Material	High-alumina ceramic (>99% purity)
Bulk Density	~1500–1600 kg/m^3
Crush Strength	>15 MPa (varies by size)
Water Absorption	< 0.3%
Thermal Stability	Up to 1500°C
Acid Resistance	Excellent
Alkali Resistance	Excellent
Porosity	Ultra-low
Toxicity	Non-toxic / inert

PRODUCT FEATURES & PERFORMANCE BENEFITS

- **High Alumina Content -** Exceptional resistance to high temperatures and corrosive environments.
- **Superior Mechanical Strength -** Minimizes breakage under heavy loads and flow velocity.
- **Low Porosity & High Purity -** Eliminates contamination and ensures inertness in catalytic systems.
- **Excellent Chemical Compatibility -** Handles both acidic and basic media in aggressive processes.
- **Long Operational Life -** Reduced maintenance and changeout frequency.

APPLICATIONS

- Catalyst bed support, Adsorbent and desiccant bed layering.
- Distribution and hold-down layers in packed towers, Steam reforming and hydrogenation units.
- Refining and petrochemical processing.

INDUSTRIES SERVED

Petrochemical • High-purity chemicals • Oil and Gas • Environmental Power Generation Systems

AVAILABLE SIZES AND SPECIFICATIONS			
SIZES (mm)	**SURFACE AREA (m2/m3)**	**FREE SPACE (%)**	**BULK DENSITY (kg/m3)**
3 x3	145	50	600
6 x 6	210	56	820
10 x 10	110	53	860
13 x 13	75	55	980
19 x 19	60	58	980
25 x 25	60	58	980
38 x 38	60	58	980
50 x 50	60	58	980

As a brand of Stanton Global, Pallchem is South Africa's leader in ceramic, plastic, and steel mass transfer media — powering high-efficiency, absorption, stripping, scrubbing, and distillation in demanding industrial applications.

We help petrochemical, mining, and process industries run cleaner, smarter, and more sustainably, backed by ISO 9001:2015 certification for our locally produced plastic products.

Enhancing separation. Reducing emissions. Enabling a greener future.

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Let's optimise your process — sustainably.