PLASTIC
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 plastic, ceramic 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. Pallchem 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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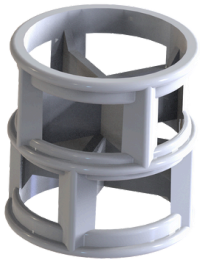
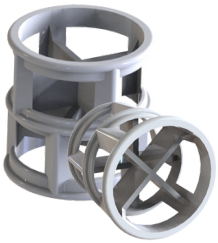
PLASTIC PALL RINGS

BUILT ON PROVEN PRINCIPLES. REFINED FOR PERFORMANCE.



Plastic Pall Rings are high-efficiency random packing elements used in gas and liquid contact processes. Made from durable thermoplastics like PP and PVDF, they feature an open cylinder design for better fluid distribution and lower pressure drop. Due to their lightweight, chemical resistance, and high void space make them ideal for aggressive environments, high-capacity systems, and cost-effective, long-term applications.

PHYSICAL AND CHEMICAL PROPERTIES	
PROPERTY	**VALUE / DESCRIPTION**
Material Options	PP, GFPP, HDPE, PVDF
Maximum Operating Temperature	Up to 143°C / 290°F depending on material
Chemical Resistance	Outstanding resistance to acids, alkalis, and solvents
Thermal Stability	High; suitable for both ambient and elevated process temperatures
Mechanical Strength	Rigid and durable under high-flow operation and thermal cycling
Design Profile	Cylindrical with multiple vertical slits and internal web structure
Weight	Lightweight; suitable for packed towers with minimal load tolerance
Toxicity	Non-toxic and inert; safe for sensitive applications



PRODUCT FEATURES & PERFORMANCE BENEFITS

- **High Free Volume:** Reduces pressure drop and increases vapor-liquid contact.
- **Internal Cross-Structure:** Enhances surface wetting and gas flow uniformity.
- **Excellent Chemical Compatibility:** Handles a wide range of corrosive substances.
- **Superior Thermal Tolerance:** Operates in high-temperature process environments.
- **Lightweight and Easy to Install:** Reduces handling time and infrastructure load.
- **Versatile Across Applications:** Effective in both gas absorption and stripping processes.

APPLICATIONS

PLASTIC PALL RINGS ARE USED IN:

- Air Pollution Control Towers
- Absorption and Desorption Columns
- Cooling Towers
- Gas Scrubbers
- Water Treatment and Biofiltration Systems
- Stripping and Distillation Columns

INDUSTRIES INCLUDE

Chemical Processing • Mining • Petrochemical • Power Generation • Water & Wastewater Treatment • Pulp & Paper Environmental Engineering • Fertilizer Production

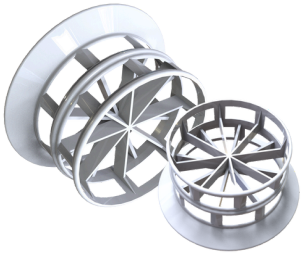
AVAILABLE SIZES AND SPECIFICATIONS			
SIZES (mm)	**SURFACE AREA (m2/m3)**	**FREE SPACE (%)**	**BULK DENSITY (kg/m3)**
16 mm / 5.8”	320	88%	110
25 mm / 1”	209	91%	70
38 mm / 1.5”	127	93%	52
50 mm / 2”	100	94%	43.5
90 mm / 3.5”	59	95%	42

PLASTIC CASCADE RINGS

Plastic Cascade Rings are high-performance random packing elements designed to improve mass transfer efficiency in various industrial processing systems. Manufactured from high-quality thermoplastics such as PP, GFPP, HDPE, and PVDF, they provide excellent chemical resistance, low pressure drop, and efficient liquid-gas contact. Their open, ribbed cylindrical structure ensures maximum void space, optimal surface area, and superior performance in scrubbing, stripping, and absorption applications.

Their physical configuration and material versatility make them ideal for use in corrosive environments, thermal cycles, and systems where lightweight, chemically inert components are critical.

PHYSICAL AND CHEMICAL PROPERTIES	
PROPERTY	**VALUE / DESCRIPTION**
Material Options	PP, GFPP, HDPE, PVDF
Maximum Operating Temperature	Up to 143°C / 290°F depending on material
Chemical Resistance	Excellent across acids, alkalis, and solvents
Thermal Stability	High, suited to elevated process temperatures
Mechanical Strength	Impact-resistant, maintains integrity under continuous use
Design Profile	Cylindrical with internal ribs; promotes fluid mixing and gas contact
Weight	Lightweight; allows for easy installation and removal
Toxicity	Non-toxic; safe for food and water applications



PRODUCT FEATURES & PERFORMANCE BENEFITS

- **High Free Space:** Minimizes pressure drop across the packing bed
- **Optimized Surface Area:** Enhances liquid-vapor interaction and efficiency
- **Corrosion Resistant:** Withstands aggressive chemical conditions
- **Lightweight:** Simplifies handling and reduces structural load
- **Versatile Temperature Range:** Operates up to 143°C / 290°F depending on polymer
- **Available in Multiple Plastics:** Customizable to suit chemical compatibility and thermal demands
- **Cost-Effective:** Long service life and minimal maintenance requirements

APPLICATIONS

PLASTIC CASCADE RINGS ARE USED IN:

- Gas Scrubbers
- Chemical Reactors
- Cooling Towers
- Water and Wastewater Treatment Units
- Biological Filters and Odor Control Systems
- Absorption and Stripping Columns

INDUSTRIES INCLUDE

Chemical Processing • Water Treatment • Petrochemical • Mining • Power Generation • Environmental Engineering • Pulp & Paper Fertilizer Manufacturing

AVAILABLE SIZES AND SPECIFICATIONS			
SIZES (mm)	**SURFACE AREA (m2/m3)**	**FREE SPACE (%)**	**BULK DENSITY (kg/m3)**
25 mm / 1”	228	90%	97.8
38 mm / 1.5”	132.5	91%	57.5
50 mm / 2”	114.2	92.7%	54.8
76 mm / 3.5”	90	90%	54.5

PLASTIC SUPER SADDLES

Plastic Super Saddles are high-performance random packing elements engineered to optimize mass transfer in chemical, petrochemical, and environmental processing systems. Manufactured from premium plastics including PP, GFPP, HDPE, and PVDF, they offer excellent thermal resistance, low pressure drop, and high void fraction.

Their open saddle shape promotes uniform fluid distribution and provides enhanced gas-liquid contact efficiency. These saddles are ideal for towers requiring corrosion resistance, lightweight construction, and reliable long-term performance across a variety of demanding applications.

PHYSICAL AND CHEMICAL PROPERTIES	
PROPERTY	**VALUE / DESCRIPTION**
Material Options	PP, GFPP, HDPE, PVDF
Maximum Operating Temperature	Up to 143°C / 290°F depending on material
Chemical Resistance	Excellent (especially in GFPP and PVDF)
UV Resistance	Moderate (HDPE, PP) to High (GFPP, PVDF)
Mechanical Strength	High impact strength, especially in GFPP
Toxicity	Non-toxic; suitable for chemical and water treatment applications
Weight	Lightweight for easy installation and low structural load

PRODUCT FEATURES & PERFORMANCE BENEFITS

- **High Free Space:** Reduces pressure drop and improves efficiency
- **Excellent Surface Area:** Enhances mass transfer and fluid mixing
- **Corrosion Resistant:** Suitable for acidic, basic, and chemical environments
- **Lightweight:** Minimizes tower structural requirements and eases handling
- **Thermal Resilience:** Operates effectively across a wide temperature range
- **Cost-Efficient:** Durable and long-lasting with minimal maintenance
- **Versatile Material Options:** Multiple plastic types available for varied media compatibility

APPLICATIONS

PLASTIC SUPER SADDLES ARE USED IN:

- Scrubbing Systems
- Absorption and Stripping Towers
- Biofilters and Trickling Filters
- Degasification Columns
- Cooling Tower Fill
- Chemical Reactors

INDUSTRIES INCLUDE

Water & Wastewater Treatment • Chemical Processing • Petrochemical • Environmental Services • Fertilizer Production
Power Generation • Pulp & Paper

AVAILABLE SIZES AND SPECIFICATIONS			
SIZES (mm)	**SURFACE AREA (m2/m3)**	**FREE SPACE (%)**	**BULK DENSITY (kg/m3)**
25 mm / 1”	199	90%	91
38 mm / 1.5”	178	92%	72
50 mm / 2”	1105	93%	60
76 mm / 3”	89	96%	50

PLASTIC TRI-PACK

Plastic Tri-Pack is a high-efficiency random packing made from durable, corrosion-resistant thermoplastics. Its unique spherical and interlocking open structure promotes superior gas-liquid contact, enhancing mass transfer efficiency in critical industrial operations.

This innovative design reduces pressure drop, improves liquid distribution, and eliminates dead spots—making it ideal for applications such as distillation, absorption, stripping, gas scrubbing, and water treatment. Whether handling harsh chemical media or optimizing gas-liquid interfaces, Plastic Tri-Pack delivers performance, durability, and cost-efficiency.

PHYSICAL AND CHEMICAL PROPERTIES	
PROPERTY	**VALUE / DESCRIPTION**
Material Options	PP, GFPP, HDPE, PVDF
Maximum Operating Temperature	Up to 143°C / 290°F depending on material
Corrosion Resistance	Excellent resistance to most acids, alkalis, and solvents
Thermal Stability	Ideal for low to moderate temperature environments
Flame Resistance	Material dependent; PVDF offers the highest thermal resistance
Toxicity	Non-toxic and suitable for industrial and environmental use
Weight	Lightweight and easy to install

PRODUCT FEATURES & PERFORMANCE BENEFITS

- **Open & Interlocking Geometry :** Prevents nesting, improves liquid dispersion, and maximizes surface area.
- **Low Pressure Drop :** Maintains efficient flow of both gas and liquid phases through packed columns.
- **High Void Fraction :** Excellent free volume for mass transfer with minimal resistance.
- **Corrosion Resistant :** Compatible with aggressive chemical media.
- **Mechanically Strong & Lightweight :** Easy to handle and install, while resisting crushing or deformation.
- **Versatile Performance:** Ideal for both new installations and tower retrofits across industries.

APPLICATIONS

PLASTIC TRI-PACK IS USED IN:

- Distillation and Fractionation Towers
- Absorbers and Strippers
- Gas Scrubbing Columns
- Water & Wastewater Treatment Units
- Solvent Recovery and Vapor Control Systems

INDUSTRIES INCLUDE

Chemical • Petrochemical • Water Treatment • Environmental • Pulp & Paper • Mining • Food & Beverage

AVAILABLE SIZES AND SPECIFICATIONS			
SIZES (mm)	**SURFACE AREA (m2/m3)**	**FREE SPACE (%)**	**BULK DENSITY (kg/m3)**
16 mm / 1”	85	90%	48
25 mm / 2”	80	93%	50
38 mm / 3.5”	38	95%	45

As a brand of Stanton Global, Pallchem is South Africa's leader in plastic, ceramic 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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Pallchem (Pty) Ltd

VAT # 468028196

Reg # 2017/289060/07

Based in South Africa. Supplying worldwide.

Let's optimise your process — sustainably.

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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

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Enhancing separation. Reducing emissions. Enabling a greener future.

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Let's optimise your process — sustainably.

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METAL PALL RINGS

Metal Pall Rings are precision-engineered random packing elements designed for superior performance in mass transfer operations such as distillation, absorption, and stripping. Manufactured from thin metal sheets, they feature a unique open-window structure with inward-bending ligules that enhance liquid-gas contact, minimize resistance, and promote uniform distribution.

Each ring contains two staggered rows of windows, covering approximately 35% of the ring's surface area. This geometry provides significantly better performance than traditional Raschig Rings, with high capacity and low pressure drop—making them suitable for both deep vacuum and high-pressure tower operations.

PHYSICAL AND CHEMICAL PROPERTIES	
PROPERTY	**VALUE / DESCRIPTION**
Material Options	Carbon and Stainless steel including 304, 304L, 316, 316L, 410
Operating Temperature	≥ 600°C (material-dependent; significantly higher than plastic/ceramic)
Corrosion Resistance	Excellent when made with stainless or specialty alloys
Thermal Stability	Outstanding; suitable for extreme temperature ranges
Weight	Higher than plastic/ceramic; requires structural support in large beds
Design Profile	Dual-window ring with inward-pointing ligules for enhanced contact
Toxicity	Inert when clean; suitable for food, chemical, and pharma use
Mechanical Stregnth	High structural integrity; suitable for both vacuum and pressure towers

PRODUCT FEATURES & PERFORMANCE BENEFITS

- **Advanced Windowed Design:** Enhances gas-liquid mixing and promotes efficient mass transfer.
- **High Free Volume:** Allows excellent liquid distribution with reduced pressure drop.
- **Extreme Operating Range:** Performs in both high-pressure and deep-vacuum environments.
- **Durable and Long-Lasting:** Maintains integrity under thermal, mechanical, and chemical stress.
- **Versatile Applications:** Effective in both small and large diameter towers.
- **Material Flexibility:** Available in stainless steel, carbon steel, and specialty alloys.

APPLICATIONS

- Distillation Columns
- Absorption and Stripping Towers
- Vacuum Fractionators
- High-Pressure Reactors
- Solvent Recovery Units
- Gas Dehydration and Separation Processes

INDUSTRIES INCLUDE

Petrochemical • Refining • Fertilizer • Chemical Manufacturing • Food & Beverage • Power Generation • Pharmaceuticals

AVAILABLE SIZES AND SPECIFICATIONS			
SIZES (mm)	**SURFACE AREA (m2/m3)**	**FREE SPACE (%)**	**BULK DENSITY (kg/m3)**
16 mm / 0.6”	344	95.6%	394
25 mm / 1”	206	96.4%	309
38 mm / 1.5”	138	97.6%	207
50 mm / 2”	107	97.6%	195
76 mm / 3”	72	97.4%	222
89 mm / 3.5”	61	97.2%	223

METAL RASCHIG RINGS

Metal Raschig Rings are simple yet highly effective random packing elements, designed for robust mass transfer performance in a wide range of industrial separation processes. These hollow cylindrical metal rings are among the earliest and most widely used tower packing types, offering a high surface area, uniform shape, and reliable operation under both vacuum and high-pressure conditions.

They provide outstanding thermal and chemical resistance, making them ideal for harsh process environments where reliability and chemical compatibility are critical.

PHYSICAL AND CHEMICAL PROPERTIES	
PROPERTY	**VALUE / DESCRIPTION**
Material Options	Carbon and Stainless steel including 304, 304L, 316, 316L, 410
Operating Temperature	≥ 600°C (material-dependent; significantly higher than plastic/ceramic)
Corrosion Resistance	High, dependent on alloy selection
Thermal Stability	Excellent; suitable for high temperature operations
Weight	Heavier than plastic/ceramic but highly durable
Design Profile	Hollow cylindrical ring; uniform shape for even distribution
Mechanical Strength	Strong, crush-resistant under industrial loads
Toxicity	Chemically inert when clean; safe for industrial and environmental use

PRODUCT FEATURES & PERFORMANCE BENEFITS

- **Classic Cylindrical Design:** Ensures even distribution and consistent mass transfer performance.
- **High Surface Area:** Enhances gas-liquid interaction to optimize separation.
- **Thermally Robust:** Performs under extreme heat and temperature cycling.
- **Corrosion Resistant:** Handles aggressive chemical media with the right alloy selection.
- **Cost-Effective and Reliable:** Long operational life with minimal maintenance.
- **Versatile and Scalable:** Suitable for both small and large-diameter columns.

APPLICATIONS

- Distillation Towers
- Gas Scrubbing Columns
- Chemical Process Reactors
- Solvent Recovery Systems
- Absorption and Stripping Towers
- Environmental Emission Control Units

INDUSTRIES SERVED

Chemical • Petrochemical • Refining • Environmental Engineering • Fertilizer • Water Treatment • Power Generation

AVAILABLE SIZES AND SPECIFICATIONS			
SIZES (mm)	**SURFACE AREA (m2/m3)**	**FREE SPACE (%)**	**BULK DENSITY (kg/m3)**
10 mm / 0.4”	275	93.8%	309
16 mm / 0.63”	199	95.6%	207
25 mm / 1”	151	96.4%	195
38 mm / 1.5”	97	97.6%	222
50 mm / 2”	84	97.6%	223
76 mm / 2.3”	61	97.4%	223
89 mm / 3.5”	61	97.2%	223

INTALOX METAL SADDLES

Intalox Metal Saddles are high-performance random packing elements designed to enhance mass transfer efficiency in demanding industrial applications. Manufactured from stainless steel, or carbon steel, their unique saddle-shaped and interlocking design minimizes resistance to gas flow, improves liquid distribution, and provides superior capacity with lower pressure drop compared to traditional ring-type packings.

Their shape and structure make them ideal for separation processes in both high-pressure and vacuum conditions, offering robust mechanical strength and long service life even under aggressive operating conditions.

PHYSICAL AND CHEMICAL PROPERTIES	
PROPERTY	**VALUE / DESCRIPTION**
Material Options	Carbon and Stainless steel including 304, 304L, 316, 316L, 410
Corrosion Resistance	High, dependent on alloy selection
Thermal Stability	Excellent; suitable for extreme temperatures
Mechanical Strength	High impact resistance; suitable for large column loads
Design Profile	Saddle-shaped with interlocking geometry for superior fluid contact
Weight	Heavier than plastic/ceramic; robust under high flow and pressure
Toxicity	Inert when clean; compliant for food and pharmaceutical use

PRODUCT FEATURES & PERFORMANCE BENEFITS

- **Saddle Geometry:** Promotes low pressure drop with high mass transfer performance.
- **Interlocking Design:** Prevents nesting and enhances uniform liquid distribution.
- **High Surface Area**: Increases efficiency of separation and reaction processes.
- **Robust and Durable:** Withstands thermal cycling, corrosive environments, and mechanical loads.
- **Flexible Application Range:** Effective in both deep vacuum and high-pressure environments.
- **Alloy Versatility:** Available in stainless, carbon steel, and exotic metals for compatibility with specific chemical media.

APPLICATIONS

- Distillation Columns
- Absorption and Stripping Towers
- Refining and Fractionation Units
- Chemical Process Reactors
- Gas Scrubbing and Decontamination Systems
- Environmental Emission Control Towers

INDUSTRIES INCLUDE

Petrochemical • Refining • Fertilizer • Chemical Manufacturing • Environmental Engineering • Power Generation • Food & Beverage

AVAILABLE SIZES AND SPECIFICATIONS			
SIZES (mm)	**SURFACE AREA (m2/m3)**	**FREE SPACE (%)**	**BULK DENSITY (kg/m3)**
15 mm / 0.6”	206	96.4%	309
25 mm / 1”	138	97.6%	207
40 mm / 1.5”	107	97.6%	195
50 mm / 2”	72	97.4%	222
60 mm / 2.4”	61	97.2%	223
70 mm / 2.75”	61	98.7%	223

METAL CASCADE MINI RINGS

Metal Cascade Mini Rings are compact, high-efficiency random packing elements crafted from corrosion-resistant metals. Their innovative design offers an optimized balance between surface area and free volume, enhancing mass transfer performance while minimizing pressure drop across a wide range of operating conditions.

Engineered for durability and performance in harsh environments, Metal Cascade Mini Rings are ideal for gas treatment, chemical processing, distillation, and absorption applications. Their compact form and robust structure make them particularly effective in small diameter columns, deep vacuum towers, and high-pressure systems.

PHYSICAL AND CHEMICAL PROPERTIES	
PROPERTY	**VALUE / DESCRIPTION**
Material Options	Carbon and Stainless steel including 304, 304L, 316, 316L, 410
Corrosion Resistance	Excellent resistance to aggressive chemical media
Thermal Stability	Suitable for extremely high temperature operations
Mechanical Strength	High; resists crushing and deformation under high flow or pressure
Design Profile	Compact ring shape with slotted and open wall
Weight	Denser than plastic/ceramic, but offers superior strength and lifespan
Toxicity	Inert and suitable for sensitive processes (e.g. food, pharma)

PRODUCT FEATURES & PERFORMANCE BENEFITS

- **Compact and Efficient Geometry:** High surface-to-volume ratio for enhanced mass transfer.
- **Optimized Gas-Liquid Contact:** Design promotes superior mixing, reducing channeling and flooding.
- **Low Pressure Drop:** Ensures energy efficiency in both vacuum and pressurized systems.
- **Robust Construction:** Built to endure mechanical stress and chemical corrosion.
- **Versatile Performance:** Functions effectively across a range of column diameters and process types.
- **Customizable Alloys:** Available in various metals to suit corrosive, high-temp or high-purity applications.

APPLICATIONS

- Distillation Towers
- Absorption and Stripping Columns
- Chemical Process Reactors
- Gas Scrubbers and Desulfurization Units
- Vacuum Fractionators
- Environmental and Solvent Recovery Systems

INDUSTRIES INCLUDE

Petrochemical • Refining • Environmental Engineering • Fertilizer • Chemical Manufacturing • Mining • Power Generation

AVAILABLE SIZES AND SPECIFICATIONS			
SIZES (mm)	**SURFACE AREA (m2/m3)**	**FREE SPACE (%)**	**BULK DENSITY (kg/m3)**
0P 17 mm / 0.67”	275	96.1%	97
1P 25 mm / 1”	309	97.9%	222
1.5P 34 mm / 1.3”	199	97.9%	207
2P 43 mm / 1.7”	151	97.4%	195
2.5P 51 mm / 2”	84	97.8%	223
3P 66 mm / 2.6”	84	97.8%	223
4P 86 mm / 3.4”	61	98.7%	223
5P 131 mm / 5.2”	61	98.7%	223

METAL NUTTER RINGS

Metal Nutter Rings are precision-engineered structured packing elements designed for high-efficiency gas-liquid separation and mass transfer in aggressive process environments. Constructed from durable metallic materials, these rings feature an innovative open structure that offers low pressure drop, enhanced liquid distribution, and excellent mechanical strength.

Ideal for distillation, absorption, stripping, and chemical reaction columns, Metal Nutter Rings are used where superior capacity, thermal resilience, and corrosion resistance are critical.

PHYSICAL AND CHEMICAL PROPERTIES	
PROPERTY	**VALUE / DESCRIPTION**
Material Options	Carbon and Stainless steel including 304, 304L, 316, 316L, 410
Corrosion Resistance	Excellent chemical durability; material dependent
Thermal Stability	Superior for high-temperature operations
Mechanical Strength	High crush resistance; suitable for pressurized or vacuum systems
Design Profile	Slotted and flanged structured ring for improved surface wetting
Weight	High density but low volume loss under stress
Toxicity	Inert and safe for industrial and chemical processing

PRODUCT FEATURES & PERFORMANCE BENEFITS

- **Engineered for Performance:** Precision-cut and formed for optimized fluid dynamics.
- **Low Pressure Drop:** Enhances operational energy efficiency and throughput.
- **High Mass Transfer Surface Area:** Promotes effective gas-liquid contact and reaction.
- **Rugged and Resilient:** Maintains structure in thermally and mechanically demanding environments.
- **Corrosion-Resistant Alloys:** Performs in chemically aggressive processes with long service life.
- **Flexible in Application:** Suitable for retrofitting and new column designs alike.

APPLICATIONS

- Distillation Towers
- Absorption and Stripping Columns
- Petrochemical Process Units
- Chemical Reaction Towers
- Gas Treatment Systems
- High-Purity Separation Plants

INDUSTRIES INCLUDE

Petrochemical • Chemical Manufacturing • Refining • Gas Processing • Fertilizer • Environmental Engineering

AVAILABLE SIZES AND SPECIFICATIONS			
SIZES (mm)	**SURFACE AREA (m2/m3)**	**FREE SPACE (%)**	**BULK DENSITY (kg/m3)**
0.7 mm / 0.03”	143	98.1%	149
1.0 mm / 0.04”	230	97.9%	165
1.5 mm / 0.06”	110	98.0%	158
2.0 mm / 0.08”	78	98.6%	114
2.5 mm / 0.1”	89	98.4%	129
3.0 mm / 0.1”	59	98.6%	111

HIGH ALUMINA BALLS

High Alumina Balls are high-performance ceramic spheres composed primarily of high-purity alumina (Al_2O_3). Engineered for exceptional hardness, low wear rate, and thermal stability, they are the go-to material for a wide variety of high-impact, high-temperature applications, particularly in grinding, milling, and catalytic support processes.

With low porosity and a stable chemical profile, High Alumina Balls deliver consistent performance in demanding operating environments, ensuring longer service life, reduced contamination, and greater process efficiency.

PHYSICAL AND CHEMICAL PROPERTIES	
PROPERTY	**VALUE / DESCRIPTION**
Composition	≥ 92% Al_2O_3 (High-purity alumina)
Hardness	Mohs 9+
Wear Resistance	Excellent; extremely low wear loss
Thermal Stability	Stable up to 1500°C; low thermal expansion
Water Absorption	≤ 0.01%
Density	3.6 g/cm^3 (typical)
Chemical Resistance	Inert to most acids and alkalis
Shape	Precision spheres, highly polished

PRODUCT FEATURES & PERFORMANCE BENEFITS

- **Ultra-Hard Surface:** Withstands high grinding impact and minimizes contamination.
- **Superior Wear Resistance:** Extends operational life in ball mills and other dynamic environments.
- **Thermally Resilient:** Maintains integrity at high process temperatures.
- **Low Expansion & Absorption:** Ensures consistency and dimensional stability in thermal cycling.
- **Chemically Inert:** Suitable for chemically reactive systems and catalyst support.
- **Versatile Sizing:** Available in a wide range of diameters for tailored performance.

APPLICATIONS

- Grinding Media for Ball Mills
- Catalyst Bed Support in Petrochemical Reactors
- Polishing and Abrasive Systems
- Ceramic and Tile Industry (e.g. frits, glazes)
- Thermal Insulation and Filtration Systems
- Paint, Ink, and Pigment Milling Operations

INDUSTRIES INCLUDE

Ceramic • Chemical • Petrochemical • Mining • Paint & Coatings • Environmental • Metallurgical

AVAILABLE SIZES AND SPECIFICATIONS			
SIZES (mm)	**SURFACE AREA (m2/m3)**	**FREE SPACE (%)**	**BULK DENSITY (kg/m3)**
3 mm / 0.1”	145	50%	600
6 mm / 0.2”	120	56%	820
10 mm / 0.4”	110	53%	850
13 mm / 0.5”	75	55%	860
19 mm / 0.7”	60	58%	980
25 mm / 1”	60	58%	980
38 mm / 1.5”	60	58%	980
50 mm / 2”	60	58%	980

As a brand of Stanton Global, Pallchem is South Africa's leader in metal, ceramic and plastic 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.

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