



SAINT-GOBAIN NORPRO

ENGINEERED CERAMIC MATERIALS

**RTO / HEAT
TRANSFER PACKINGS**

GO BEYOND THE STANDARD

Saint-Gobain NorPro specializes in providing high quality innovative ceramic products. As the original developer of ceramic saddles (previously known as Intalox®) for heat transfer applications, we have proven our expertise in this traditional packing media and still provide the high quality, reliable saddles that we have been making for over 60 years.

In keeping with Saint-Gobain NorPro's tradition of collaborating closely with our customers, we utilized our expertise in critical aspects of heat transfer media to develop our exclusive engineered shapes and specialty ceramic formulations to provide superior performance in Regenerative Thermal Oxidation (RTO) units. Drawing on our applications knowledge, materials expertise and design capabilities, we developed a wide array of engineered materials and shapes for specific RTO heat transfer requirements, including use in both new construction and revamps.

Our shapes and formulations allow you to tailor a solution to suit your specific application, providing you with superior value through a combination of improved unit performance and reduced energy needs - resulting in an extended media life and lower operating costs.

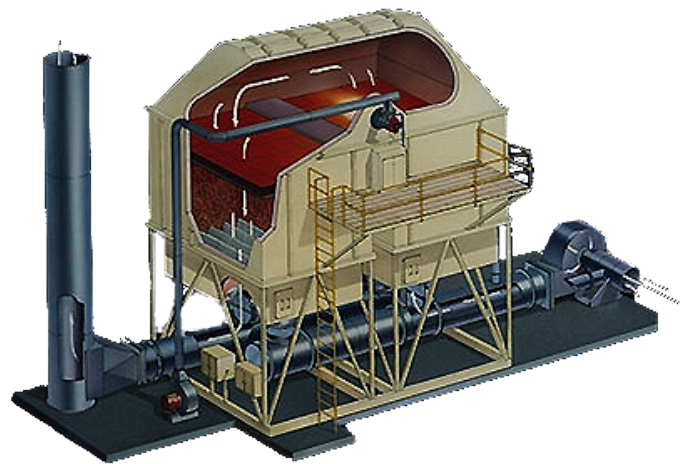
Whether you are working with OSB, pharmaceuticals, paint, or other applications, we have the best heat transfer media to let you get the most out of your RTO.

OUR INNOVATIVE SHAPES REDUCE OPERATING COSTS THROUGH:

- Lower pressure drop
- Better thermal efficiency
- Reduction in plugging and channeling

OUR UNIQUE CERAMIC FORMULATIONS PROVIDE LONGER SERVICE LIFE WITH:

- Improved alkali corrosion resistance
- Improved halide corrosion resistance
- Greater thermal shock resistance
- High heat tolerance up to 1200°C



RTO MEDIA DESIGNED TO IMPROVE PERFORMANCE



Saddles

Used as heat transfer media for over 25 years



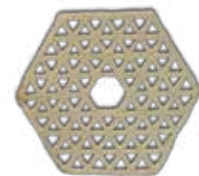
Ty-Pak®

20% lower pressure drop*



Snowflake™

40% lower pressure drop*



HexPak™

40% lower pressure drop*
Higher thermal efficiency*

*Compared to 1in. saddles

EXCLUSIVE SHAPES

We think beyond the standard saddle and have developed a selection of exclusive engineered shapes that provide improved RTO performance versus the use of 1 in. saddles.



HEXPAK™ HEAT TRANSFER MEDIA

Filling your RTO with HexPak™ packings will positively impact performance by providing increased thermal efficiency and reduced pressure drop compared to 1 in. saddles. The unique shape of HexPak allows for a lower flow resistance that can provide up to a 40% reduction in pressure drop, increase RTO capacity by approximately 25%, and reduce electricity costs by nearly 30%.

SNOWFLAKE™ HEAT TRANSFER MEDIA

If your RTO unit is prone to fouling from the process gas stream, Snowflake™ packings are the ideal solution. Snowflake media is designed to have an open structure and short channel path, which help prevent fouling due to plugging and allow a reduction in pressure drop of up to 40% compared to 1 in. saddles.

TY-PAK® HEAT TRANSFER MEDIA

The first random tower packing designed specifically to improve RTO performance was Ty-Pak® heat transfer media. The distinctive shape of Ty-Pak offers consistent performance over time by preventing channeling and reducing settling. Because of its design, Ty-Pak media is easy to load and provides 20% lower pressure drop compared to 1 in. saddles. These benefits combined with the high heat exchange efficiency of Ty-Pak media leads to a more economic packing choice overall for your RTO.

SADDLES

Saint-Gobain NorPro continues to offer high performance choices even when a traditional packing shape is preferred by providing our classic saddles in multiple ceramic bodies to maximize your RTO efficiency.

UNIQUE CERAMIC FORMULATIONS

All of our packings are produced in Saint-Gobain NorPro's high quality Proware™ ceramic formulation. Proware™ ceramic has a finely grained microstructure allowing it to be mechanically stronger, less porous, and considerably more acid resistant than porcelain and stoneware-type products. To better meet the needs of demanding RTO environments, Saint-Gobain NorPro developed several advanced ceramic formulations tailored for better service life when faced with more extreme conditions.

Alkaware® out-performs standard ceramics when used in units that require a packing with greater resistance to alkali corrosion and thermal cycling.

Pharmaware™ was specifically designed to withstand chloro- and fluorohydrocarbon species up to 1200°C and is ideal for pharmaceutical applications.

ATTRIBUTE	PROWARE™	PHARMAWARE™	ALKAWARE®
Available shapes	HexPak™ Snowflake™ Ty-Pak® Saddles	Ty-Pak® Snowflake™ Saddles	Snowflake™ Ty-Pak®
Thermal Shock	Good	Better	Best
Hi- Temperature Resistance	Good	Best	Better
Acid Resistance	Best	Good	Not Recommended
Alkali Resistance	Not Recommended	Not Recommended	Best
Halide Resistance	Not Recommended	Best	Not Recommended

No matter the conditions, we have a shape and formulation that is right for you to help maximize the use of your RTO.

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The information herein does not constitute a guarantee or warranty. Saint-Gobain NorPro's warranty is set forth in its standard terms and conditions which govern sales of Saint-Gobain NorPro products. The standard terms are set forth in Saint-Gobain NorPro quotations and acknowledgements and are also available upon request.

