DENSTONE®
SUPPORT MEDIA

Denstone® 2000 Support Balls

Supreme Reliability and Survival from Denstone®

Saint-Gobain NorPro's Denstone® 2000 support media is the product of choice for more severe hydroprocessing applications such as hydrocracking, or when an extra degree of reliability is desired.

The patented formulation used in Denstone 2000 media was developed specifically for the demanding environments of hydrocracking processes. This formulation, paired with state-of-the-art manufacturing techniques, results in high crush strength and an engineered microstructure that enables the support media to survive rapid depressurization and thermal shock seen in demanding applications.

Saint-Gobain NorPro

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Denstone® 2000 media provides the same benefits as Denstone® 57 media, while delivering supreme reliability and strength through:

- **Unmatched survival in rapid depressurization** – Our engineered microstructure gives Denstone 2000 spheres the strength they need to survive after thermal cycling and rapid depressurization in hydroprocessing applications. After being heated to 850°F (455°C) at 1500 psi hydrogen, then depressurized instantly to ambient pressure, over 99% of the Denstone® 2000 ceramic support media remained intact, compared to only 25% survival of the competing support media.
- **Superior impact resistance and compressive strength** – Using Denstone® 2000 media will help you safeguard against channeling and plugging of your bed or fouling of your catalyst caused by chipping and breakage of your support media. The superior strength and impact resistance of these spheres allow them to remain intact throughout the loading and operation of your unit. Denstone 2000 spheres have demonstrated their ability to maintain their structure by withstanding a 76% higher impact force in drop tests than the competition and surviving 100% of free fall drop tests performed.
- **High thermal shock resistance** – Denstone® 2000 spheres retain their compressive strength in severe environments. This product excels at retaining its compressive strength after being heated to temperatures as high as 1500°F then quenched with water at room temperature; proven superiority with 61% greater crush strength after quenching than that of the competition.

When you need reliable support media for your demanding application, turn to the media that revolutionized the industry with unmatched impact and thermal shock resistance, crush strength and survivability, Denstone® 2000 media.

(continued)

NORPRO

SAINT-GOBAIN

Denstone® 2000 Support Balls Typical Properties

Physical Properties

Nominal Size		Diameter (mm)		Crush Strength (lb)	Crush Strength (kg)	Crush Strength (N)	Bulk Density* (kg/m³)		Bulk Density* (lb/ft³)	
mm	in	min	max	min	min	min	min	max	min	max
3	1/8	2.8	4.3	50	22.7	223	1281	1378	80	86
6	1/4	6.1	8.1	160	72.5	711	1281	1378	80	86
10	3/8	8.4	10.9	250	113	1109	1281	1378	80	86
13	1/2	11.4	14.5	500	227	2227	1281	1378	80	86
16	5/8	14.5	17.5	600	273	2678	1281	1378	80	86
19	3/4	17.8	22.4	1050	477	4679	1281	1378	80	86
25	1	23.6	29.2	1750	795	7799	1281	1378	80	86
32	1-1/4	30.0	35.1	2000	900	8829	1281	1378	80	86
38	1-1/2	35.1	40.1	2000	900	8829	1281	1378	80	86
50	2	48.3	55.9	2000	900	8829	1281	1378	80	86

**bulk density will vary based on manufacturing location*

Chemical Properties

	min %	max %
SiO_2	67.0	77.0
Al_2O_3	18.0	26.0
Fe_2O_3	-	1.7
TiO_2	-	1.5
CaO	-	1.0
MgO	0	1.0
Na_2O	0	2.0
K_2O	-	6.0
$Al_2O_3 + SiO_2$	90.0	96.0

Other Properties

Leachable Iron	≤ 0.1%
Sphericity	< 1.25
Max Operating Temperature	1000°C
MOHS Hardness	> 6.5
Attrition (weight loss)	≤ 1.0%
Water Absorption	2.0 - 6.0%

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