



# Zeeospheres

## ceramic microspheres

### Introduction

Zeeospheres™ Ceramic Microspheres are unique, gray-colored, fine particle size, high-strength microspheres. They are opaque to visible light, but transparent to UV light. These products are typically used to reduce VOC levels, increase filler loadings, improve hardness, and add burnish, scrub and abrasion resistance to a variety of coating formulations. Due to their low resin demand, high hardness, and inert chemistry, these products have found utility in high solids, water reducible radiation-curable and high durability coatings, powder coatings, and a wide range of premium performance coatings.

The key raw materials from which these Zeeospheres microspheres are produced have become darker over the years. Since many users have products or applications where color is important, Zeeospheres Ceramics, LLC adds lighter-colored ingredients, to ensure that the final color of the product is within the historical color range of 64 to 69<sup>1</sup>. This color control adds cost and complexity to the production of the microspheres, but helps ensure color consistency.

In response to requests from customers for options for avoiding some of the raw material price increases all chemical businesses have experienced, Zeeospheres Ceramics, LLC has introduced non-color-controlled versions of Zeeospheres Ceramic Microspheres.

### “N” Grades–Non-Color-Controlled

#### Material Description

Shape	Hollow spheres with thick walls
Composition	Silica-Alumina Ceramic

#### Typical Physical Properties (Not for specification purposes)

Product	Zeeospheres™	Ceramic Microspheres N Grades
Grayness (“L” Value)	20 minimum	
> 4,200 kg/cm <sup>2</sup> (> 60,000)		
pH	2.0–10.0	ASTM E 70
Hardness	7	Mohs Scale
Softening Point	1,020°C (1,870°F)	
Dielectric Constant	3.7–4.6	
Thermal Conductivity	2 W/mK	

Properties	Zeeospheres™ Ceramic Microspheres N Grades			
	N-200	N-400	N-600	N-800
True Density (gm/cc)	2.5	2.5	2.3	2.2
Particle Size (microns)	95 <sup>th</sup> PCTL	12	24	40
	90 <sup>th</sup> PCTL	9	14	24
	50 <sup>th</sup> PCTL	4	5	6
	10 <sup>th</sup> PCTL	1	1	1
Surface Area (m <sup>2</sup> /cc)	6	5	4	3
Oil Absorption*	30	25	25	25

\* gm of oil per 100 gm of microspheres

#### Formulating Information

Zeeospheres™ Ceramic Microspheres “N” Grades are best dispersed by using sand, ball and roller mills. For optimal dispersion, the microspheres should be added to the grind stage along with pigments and other filler materials. Use of a dispersant can aid in the wet-out and dispersion of these products.

#### Product Storage, Handling and Safety

Please read and follow the precautions and directions for use on the product label and on Material Safety Data Sheets available from Zeeospheres Ceramics, LLC, (985) 532-2541, [www.zeeospheres.com](http://www.zeeospheres.com).

<sup>1</sup>“L” value on a standard colorimeter or reflectometer.

