

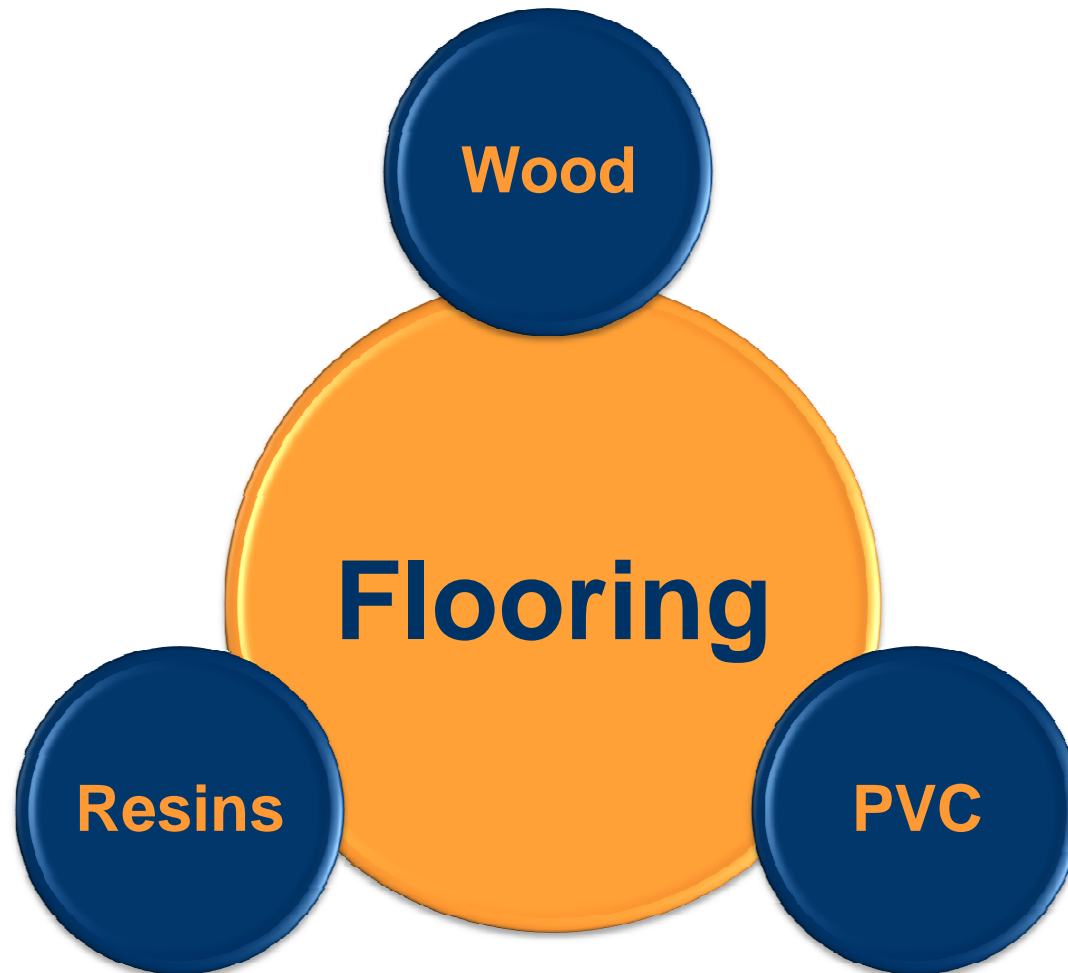
## *ORGASOL® Ultra-Fine Powders Applications*

### ***Flooring***



# Orgasol® in different kinds of flooring...

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# ...For different End-applications

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# Orgasol®: An interesting additive in...

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- **Top coating varnishes**

Wood Flooring	PVC Flooring
<ul style="list-style-type: none"><li>• Polyurethane</li><li>• Epoxy</li><li>• Acrylic</li></ul>	<ul style="list-style-type: none"><li>• Polyurethane</li></ul>

- **Resins Flooring**
  - Polyurethane
  - Epoxy

# FLOORING REQUIREMENTS

# Assets of Orgasol® in Wood Flooring



- Abrasion Resistance
- Scratch Resistance

- Gloss Control with no impact on viscosity (satin to mate)
- Texturing effect (smooth to rough)



**Essential on contractor-commercial market**

# Assets of Orgasol® in PVC Flooring



- Specific Texture
- Large range of average particle size

- Spherical particle shape

**Anti-slippery**  
*in dry and wet conditions*

**Cleanability**

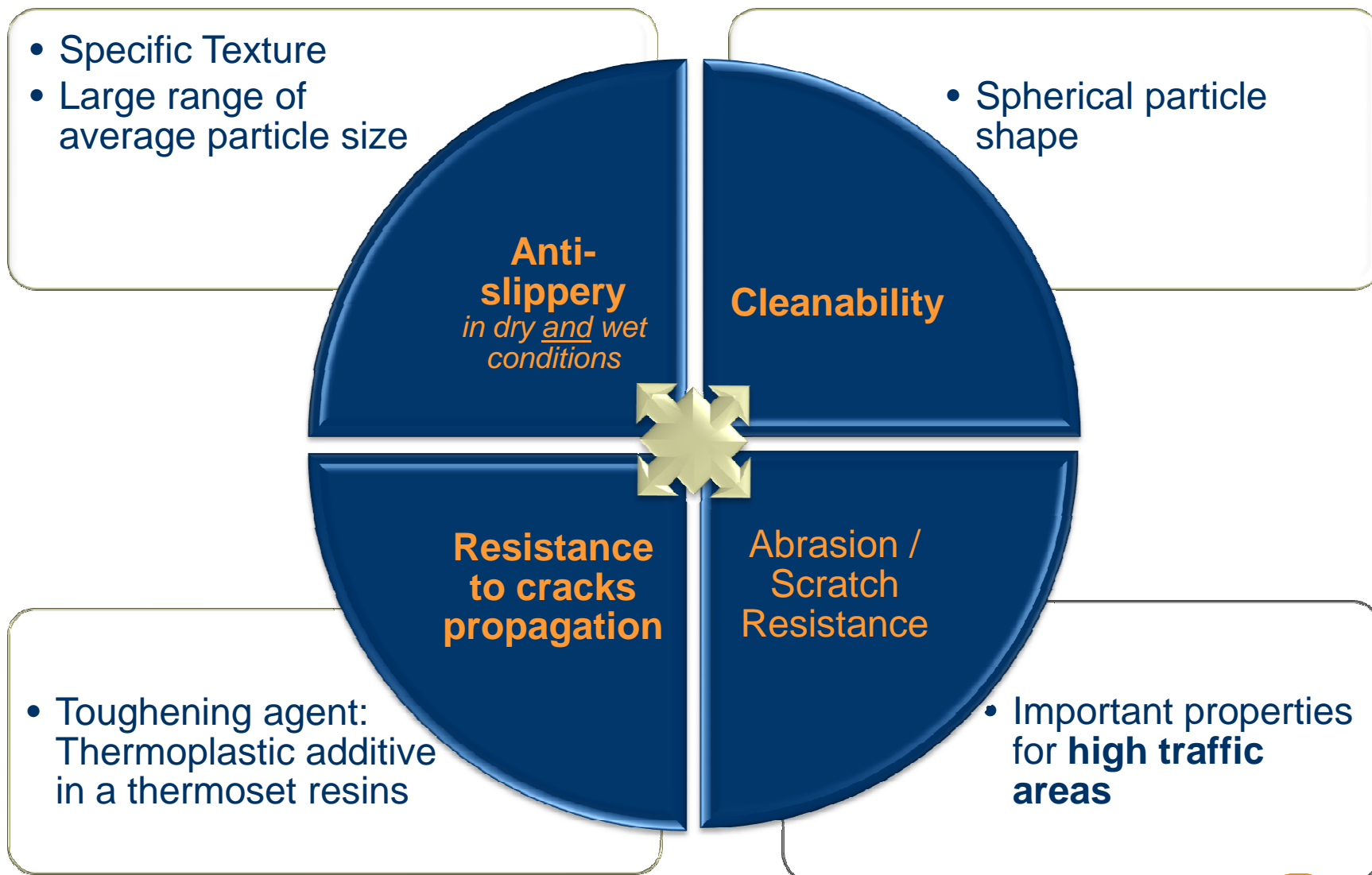
**Nice Finish**

**Abrasion /  
Scratch  
Resistance**

- Smooth to mineral touch
- Mate finishes - No impact on viscosity level
- Stain resistance

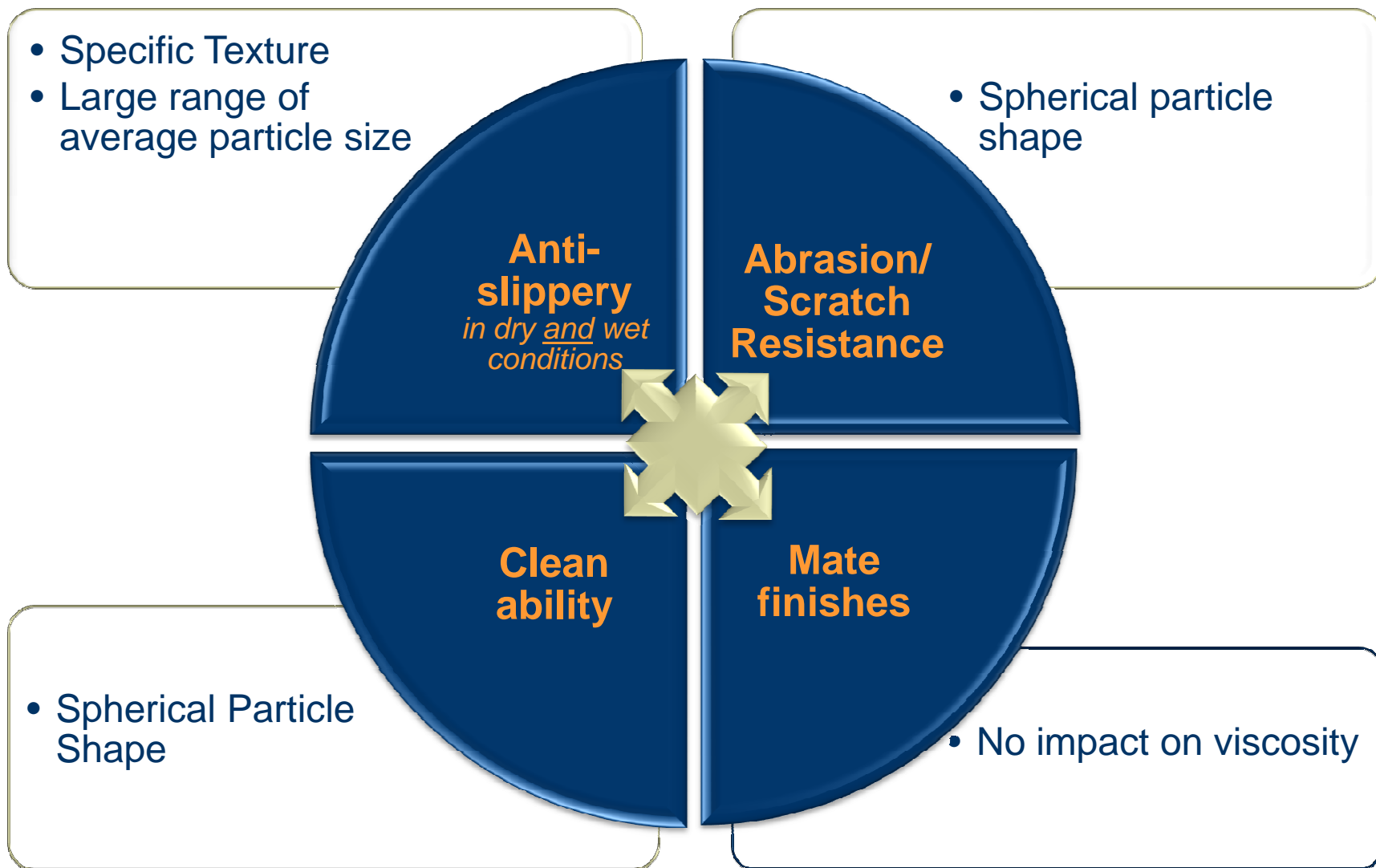
- Important properties for **high traffic areas**

# Assets of Orgasol® in Resins Flooring





# Assets of Orgasol® in Sport Flooring



# FOCUS ON ORGASOL® BENEFITS IN FLOORING

# Analysis of Orgasol® Properties



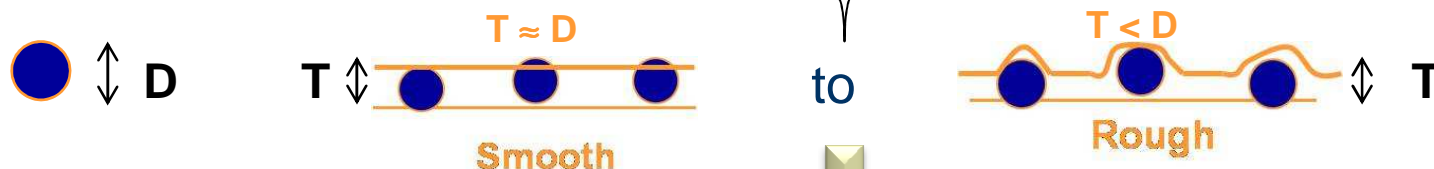
Large offer of powder  
average particle size

From 5 to 60 microns

Ratio particle size/  
coating thickness

% of Orgasol®  
incorporation

1 to 10%



A unique texturing agent

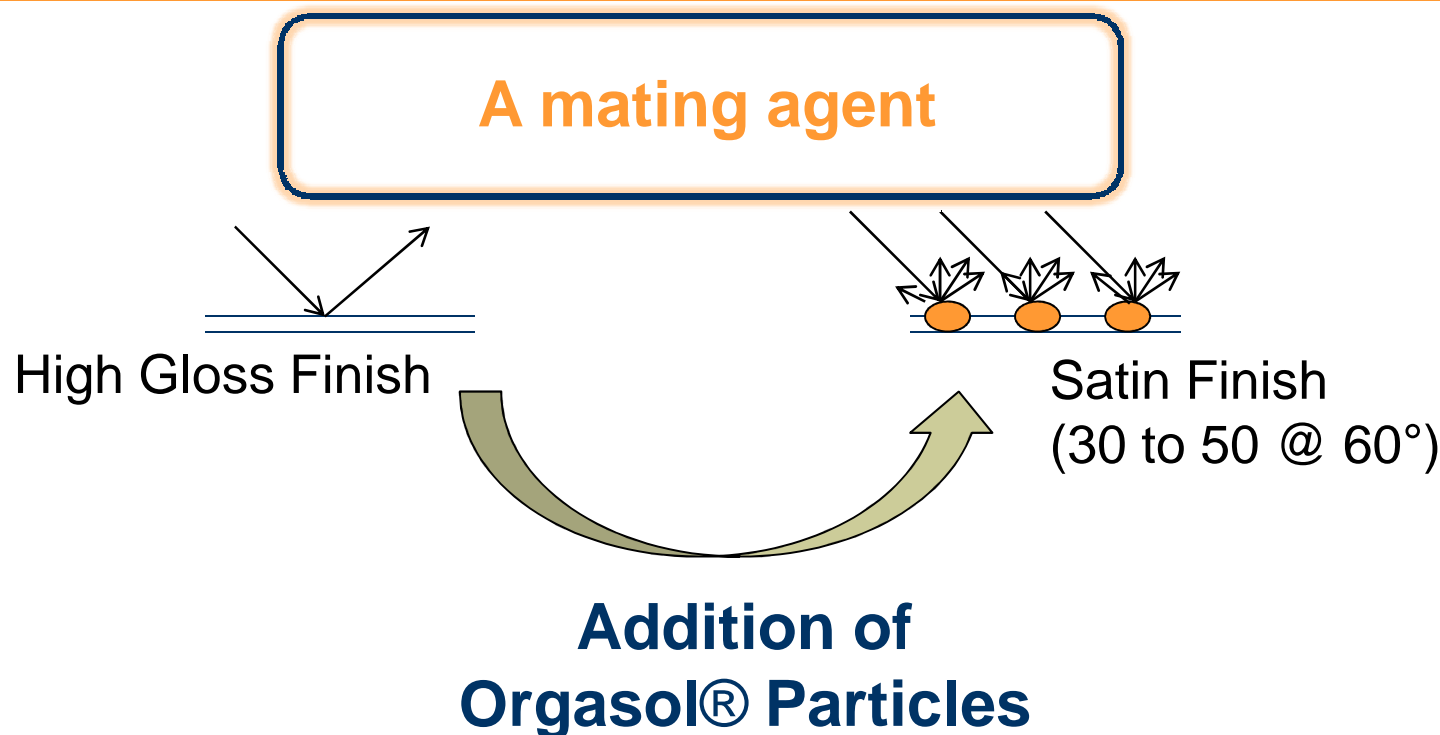
Regular Surface

Very Narrow Size  
Distribution

A Spherical Shape

A unique patented polymerization process

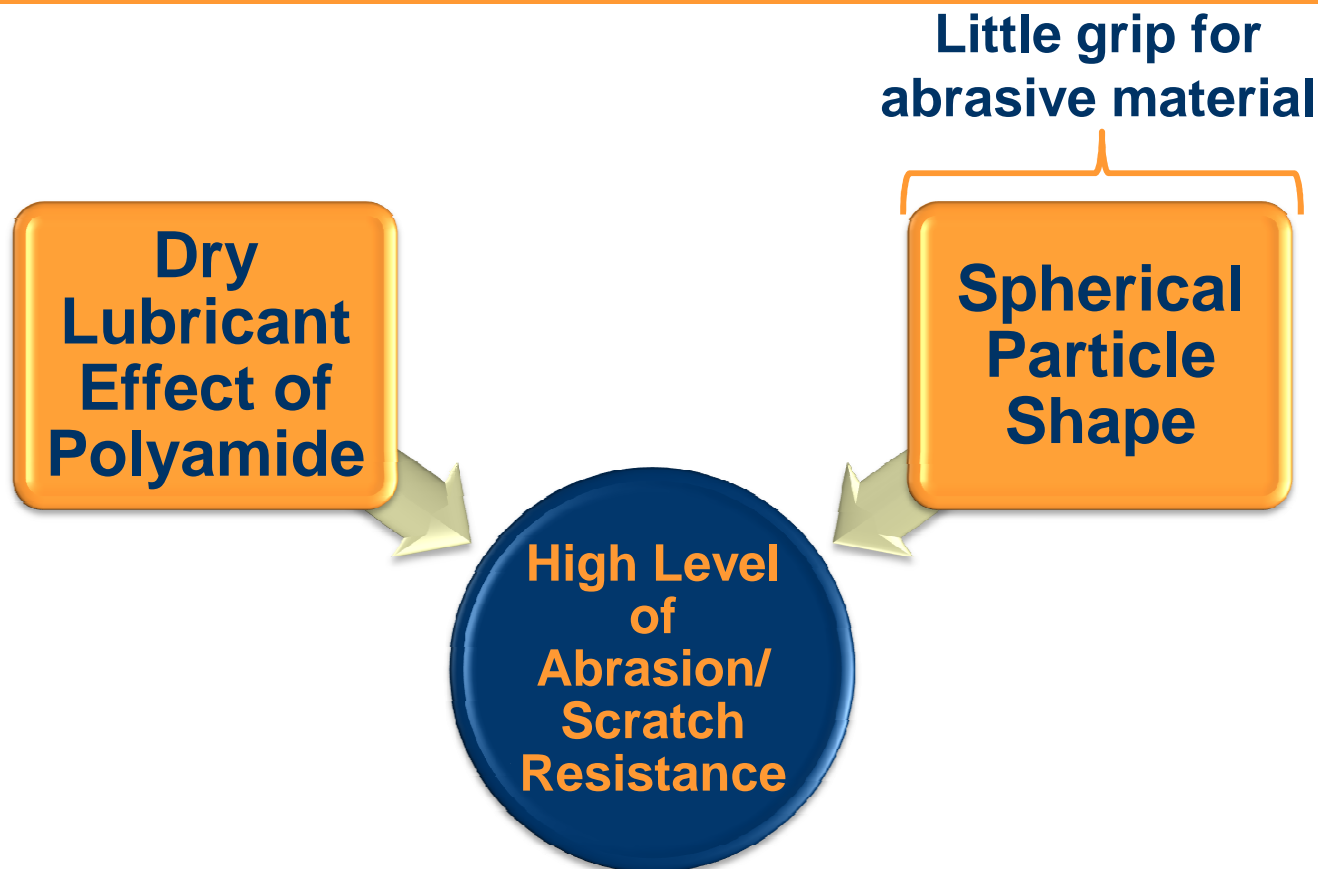
# Analysis of Orgasol® Main Properties



- **For gloss level < 30, combination with silica is necessary**
  - **Orgasol® enables to limit an increase in viscosity level**
- **Optimum gloss reduction for coating thickness 10 to 25 µm:**
  - **Because Orgasol® has a limited tendency to migrate at the surface**

⇒ 2001 EXD NAT1, 2001 UD NAT1

# Analysis of Orgasol® Main Properties



**Especially interesting for high traffic areas  
(malls, sport floorings, public buildings...)**

# Additional Properties

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- **Anti Slipping**
- **Improvement of clean ability**
- **Low density → Stability of Orgasol® in the formulation**
- **Low impact on formulation viscosity contrary to silica**
- **Easy to be dispersed in water based, solvent based, 100% solid UV curable formulations**

# FOCUS ON UV CURING FORMULATIONS

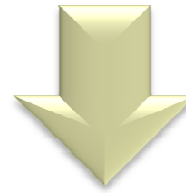
# Orgasol® Assets in UV curable Coatings

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- **UV Formulation are 100% reactive systems containing:**
  - **Acrylic functionalized Oligomer**
  - **Monomers (Reactive solvent)**
  - **Photoinitiator**
- **Features of 100% reactive UV Coating**
  - **No solvent  $\Rightarrow$  no shrinkage**
  - **Higher level of matting agent to get a matte finish**
  - **High increase in viscosity**

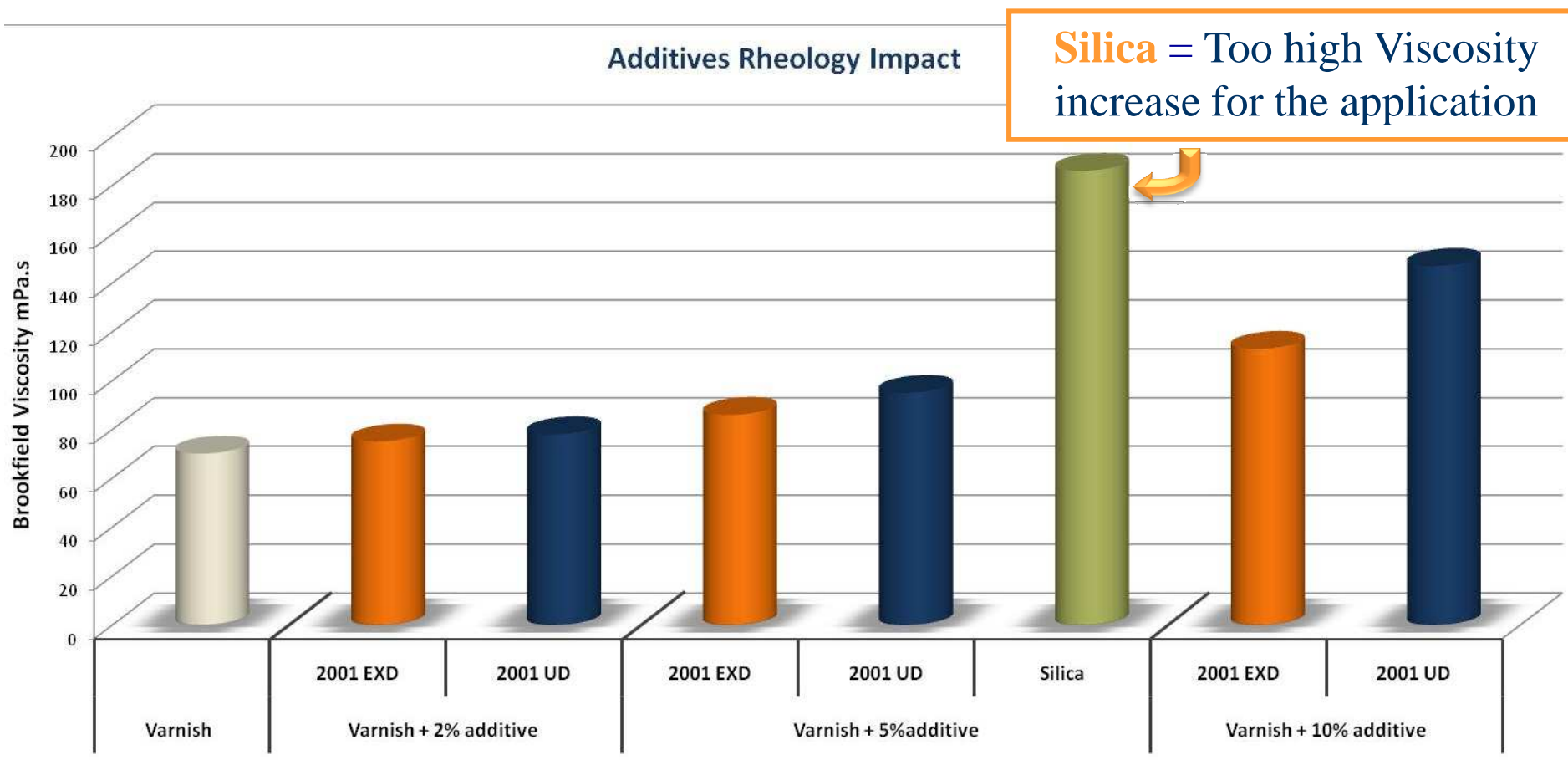


# Orgasol® Assets in UV Coatings



**A solution to combine  
Abrasion/Scratch Resistance & Gloss Control  
maintaining a low viscosity in 100% solid UV curable coatings**

# Influence of Orgasol® on the formulation viscosity



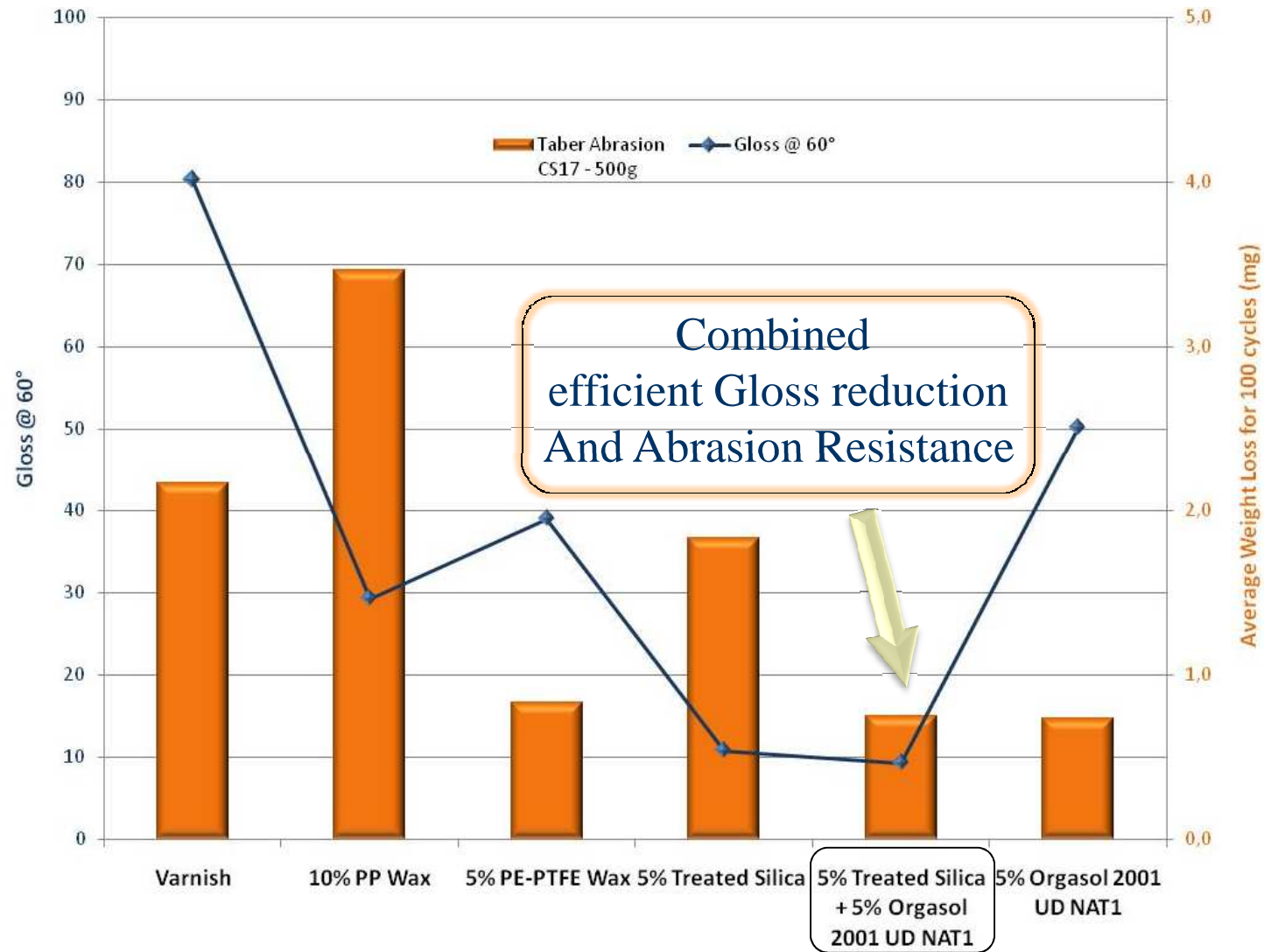
**At concentration < 5% : no impact of Orgasol® on the viscosity  
≠ Silica**

... Obtained with a formulation for PVC floorings

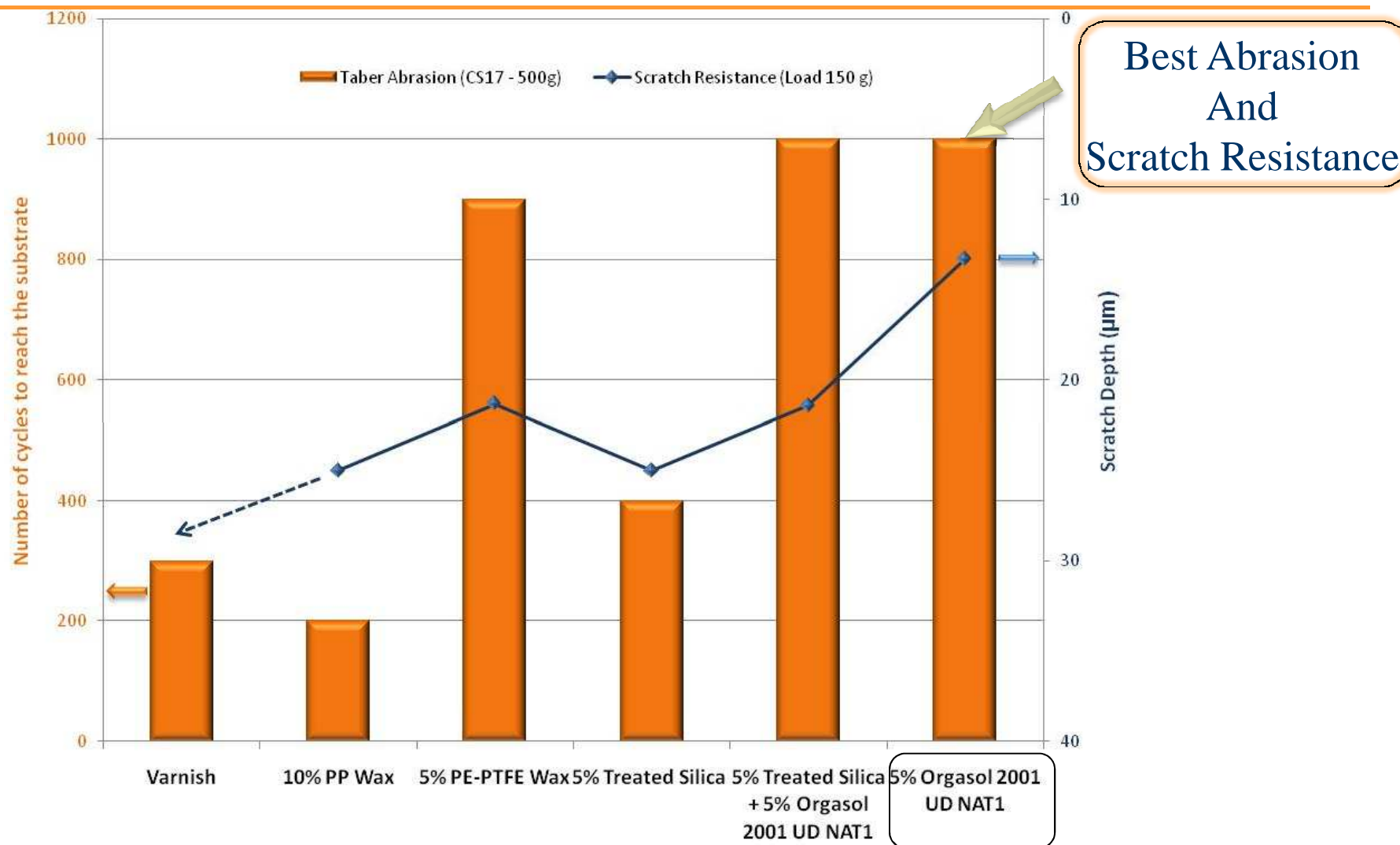


Components	Nature	Weight (g)	Supplier
CN 981	Urethane – Diacrylate Aliphatic oligomer	30,0	Cray Valley
SR 506 D	Isobornyl Acrylate	12,8	Sartomer
SR 238	1,6 Hexanediol Diacrylate	33,7	Sartomer
SR 454	(3OE) Ethoxylated Trimethylolpropane Triacrylate	5	Sartomer
SR 399	Dipentaerythritol Pentaacrylate	5	Sartomer
CN 385	Benzophenone	2,7	Cray Valley
Darocur 1173	Photoinitiator	1,8	Ciba Specialities

# Abrasion Resistance & Gloss reduction




















# Abrasion & Scratch Resistance



# Orgasol® vs Indirect Competitors



	Additives Powders			
		PP/PE Waxes	Silica	PTFE - PE Waxes
Abrasion Resistance				
Scratch Resistance				
Gloss Reduction				
Texturing Effect				
Other Properties	Good Slip Control/ Improve Cleanability	Poor Mar resistance	Increase in viscosity	Poor stability/ Recoatability issue

# Conclusion: Orgasol® in Flooring Coating

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- **Orgasol® : a full range of advantage in UV curable formulation**
  - **Process advantage**
    - ⇒ **Gloss control without viscosity increase (PVC Flooring)**
  - **Improve abrasion resistance and other surface properties (scratch, stain, slipperiness)**
  - **Create special textured coatings and effect (stone for flooring)**
- **Efficient for Low thickness coatings (10-25 µm) :**
  - **2001 UD NAT1 / 2001 EXD NAT1 for gloss reduction**
  - **2002 ES5 or ES6 for texture**
  - **Rilsan® fine powder range can be used to get more texturised finish**

# Arkema Polyamide Powders



## Similar Abrasion & Scratch Resistance



Uniform Spherical  
particle shape by a  
unique patented  
polymerization  
process

**PA12, PA6,  
PA 6/12**

Regular  
Texture

Easy clean  
ability

**PA 11**

More  
Textured  
effect

Improvement  
of opacity

Brighter white  
finish

Multi-colored  
stable effect



A higher Melting Point

Grinded Particles

White Rilsan Grades

MAC Colour Rilsan  
Grades



## *Orgasol® ANNEX*



# Orgasol®: Nomenclature



PA nature ( **2** for PA12, **1** for PA6, **3** for PA6-12 )

Particle size (**UD** for 5 µm, **EXD** for 10 µm, **D** for 20 µm,  
**ES3 - 6** for 30 - 60 µm)

**2002 EXD NAT X**

Melt Viscosity indication  
**1 < 2**

Color (**NAT** stands for natural )

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