Selection Guide -Silicones for Coating Applications-

What are coating agents?

4 components and application examples of coating agents are as follows:

Components of coating agents
- Resins
- Additives
- Pigments & Fillers
- Solvents

Coatings applications
1. Inks
2. Paints
3. Films
4. Coatings
5. Adhesives

How silicones are used in coating agents?

Our silicones are used in 4 different ways with the Resins, Additives, and Pigments & Fillers from which coating agents are made.

Use of silicone

1. Silicone based Resins
   - Resins
   - Additives
   - Pigments & Fillers

2. Resin Hybridization Agents
   - Resins
   - Additives
   - Pigments & Fillers

3. Surface Modifiers for Coating
   - Additives
   - Pigments & Fillers

4. Surface Modifiers for Pigments & Fillers
   - Additives
   - Pigments & Fillers

Use 1 Silicone based Resins

Silicone Resins
- Structure: Resin having a high molecular weight and three-dimensional siloxane network structure.
- Features: Can be used on their own, or to modify organic resins. Can also be used as reactive diluents.

Use 2 Resin Hybridization Agents

Silicone Oligomers (Type A)
- Structure: Oligomer having a relatively low molecular weight and three-dimensional siloxane network structure. Molecules contain alkoxy groups and reactive functional groups.
- Features: Can be used on their own, or to modify organic resins. Can also be used as reactive diluents.

Use 3 Surface Modifiers for Coating

Silicone Powders
- Structure: Monomer whose molecules contain alkoxy groups and reactive functional groups.
- Features: Alkoxy groups act to improve adhesion to inorganic materials. Highly monodisperse, less aggregation. Fine adhesion to organic materials.

Use 4 Surface Modifiers for Pigments & Fillers

Silicone Oligomers
- Structure: Oligomer having a relatively low molecular weight and three-dimensional siloxane network structure. Molecules contain alkoxy groups and reactive functional groups.
- Features: Can be used on their own, or to modify organic resins. Can also be used as reactive diluents.

- Features: Used as additives to improve the surface conditions of coatings.
- Resulting Properties: Coating solution designed for use as leveling agents, sliders, antistatic agents, and in coatings.

- Features: Used to modify the surface of fillers to improve coating performance.
- Resulting Properties: Silica powder used to improve particle size distribution. Particle surface treated to give them extra water repellency.