

# 反光粉 Retro-reflective Powder

反光粉由高折射率的玻璃微珠构成，该产品被光源照射时能形成良好的回归反射，将绝大部分入射光“反射”至光源处。特别是在低可见度环境中，这种回归反射能使被照射物更好的被识别。涂布有反光粉的物体在靠近光源处的观察者眼中（如汽车司机）展现非常明亮的效果，因此反光粉特别适用于各种对可见度较高的产品，例如反光服装、反光漆、反光标识牌等。

Retro reflective powder is composed of microsphere glass beads which have high refraction. When illuminated by a light source, they will return the light rays to the direction from which they come, where a so-called retro-reflection occurs. The retro-reflectivity helps eyes to perceive the objection better, especially in low light conditions. Materials coated with retro-reflective powder appear brightest to observers located near the original light source, such as a car's headlights. Since little light is scattered when it is returned, these materials enhance the contrast of the retro-reflective materials for an observer located near the original light source. It is ideal for applications where high visibility is required.

## 基本产品型号

## General grades

型号 Code	外观 Appearance	平均粒径 Average Particle Size (μm)	折射率 RI (Nd)	密度 Density (g/cm <sup>3</sup> )
PROViz-W15	白色粉末 White powder	15-35	1.93±0.01	4.1±0.2
PROViz-W35	白色粉末 White powder	35-55	1.93±0.01	4.1±0.2
PROViz-W40	白色粉末 White powder	40-50	1.93±0.01	4.1±0.2
PROViz-W50	白色粉末 White powder	50-70	1.93±0.01	4.1±0.2
PROViz-G15	银灰色粉末 Grey powder	15-35	1.93±0.01	4.1±0.2
PROViz-G25	银灰色粉末 Grey powder	25-35	1.93±0.01	4.1±0.2
PROViz-G35	银灰色粉末 Grey powder	35-55	1.93±0.01	4.1±0.2
PROViz-G38	银灰色粉末 Grey powder	38-48	1.93±0.01	4.1±0.2
PROViz-G48	银灰色粉末 Grey powder	48-58	1.93±0.01	4.1±0.2

更多粒径规格可根据要求提供。More particle sizes are available upon request.



Our retro-reflective powder generally comes into three particle size groups.

- **Large: 80-100 μm or ≈150-200 mesh**  
- Relatively large particle size  
Very high retro-reflection intensity (400-500 cd/lx.m<sup>2</sup>), suitable for applications such as reflective paints and printing inks for safety wears/signs that require very high visibility at long distance
- **Medium: 35-80 μm or ≈200-400 mesh**  
- Relatively moderate particle size  
Moderately high retro-reflection intensity (200-400 cd/lx.m<sup>2</sup>), suitable for applications such as reflective paints and printing inks for safety wears/signs
- **Fine: 15-35 μm or ≈400-700 mesh**  
- Relatively small particle size  
Moderately low afterglow intensity (20-200 cd/lx.m<sup>2</sup>), suitable for certain applications that require fine particle size and not very high retro-reflection

我们的反光粉主要分为以下几个粒径

- **大颗粒: 80-100 μm 或150-200 目**  
- 非常高的反射亮度 (400-500 cd/lx.m<sup>2</sup>)  
适合用于要求较好的远距离反射效果的产品, 比如安全服装、安全标识的反光漆和反光油墨
- **中等颗粒: 35-80 μm 或200-400 目**  
- 较好的反射亮度 (200-400 cd/lx.m<sup>2</sup>)  
适合用于要求较好反光效果的产品, 比如安全服装、安全标识的反光漆和反光油墨
- **小颗粒: 15-35 μm 或400-700 目**  
- 反射亮度一般 (20-200 cd/lx.m<sup>2</sup>), 适用于要求粒径较细、亮度不高的产品

## 主要应用

### Paints & Coatings

- Water & solvent based paints (reflective coatings, paints)
- Fabric coatings (reflective fabric, yarn)
- Aerosols
- Artist paints / hobby paints

### Screen printing inks (reflective print)

## Main applications

### 涂料、油漆

- 涂料、油漆 (反光涂料、反光漆)
- 织物涂层 (反光面料)
- 自喷漆 (反光自喷漆)
- 艺术涂料、美术画材

### 丝网印刷油墨 (反光图案)

# 反光粉 Retro-reflective Powder

## 产品应用 Applications

### Application in paints / coatings

Our retro-reflective powders can be incorporated in to various paint / coating systems on different surfaces, including brush-on, roll or aerosol paints to achieve the retro-reflective effect for the objects that are needed to be seen in low light or night conditions or just for fun.

- It is better to use a clear vehicle and that the painted surface is lighter color.
- Apply high speed mixing or stirring instead of milling to avoid breaking down the particles.
- Generally use about 30-50% parts of retro-reflective powder by weight into the clear paint. The powder loading can also be adjusted according to the effect that is needed.
- Avoid sediment by using high viscosity resin or anti-sediment additives. Stir well before application.
- A metallic stock (for example, aluminum) is optional to enhance the effect. The thickness of coating should be controlled according to the particle size of the powder used. It is better to make the powder half exposed on the surface of the paint to achieve the best effect. If the powder is totally "buried" in the paint, the retro-reflective effect will be diminished.
- A clear overcoat is optional to protect the powder from peeling off but this will decrease the retro-reflection to some degree.

### 应用于涂料、油漆

我们的反光粉可兼容多种涂料、油漆体系制成发光涂料、油漆，并通过涂刷、滚涂、喷涂、自喷漆等方式应用于多种表面，以达到反光效果。

- 尽量使用透明涂料、油漆介质，涂附表面也尽量以浅色为主。
- 不可研磨，以免破坏反光粉颗粒，简单的分散或者搅拌均匀即可。
- 通常情况下，建议添加重量比为30-50%，可根据预期效果调整添加比例。
- 反光粉比重较大，容易沉淀，建议使用粘度较高的介质，或者添加防沉淀助剂。施工前还需搅拌均匀。
- 可选用金属色（如银色）的底漆来增加反光效果。反光漆膜的厚度应根据所选反光粉的粒径来控制，尽量使反光粉半露在在漆膜表面以达到最佳的反光效果。如果反光粉完全“埋入”漆膜中，反光效果将大大减弱。
- 反光漆表面可再添加一道清漆以保护反光粉掉落，但也会一定程度上影响反光效果。

### 应用于丝网印刷油墨

我们的反光粉可制成丝网油墨并应用于多种基材上，制作成反光膜、反光面料、反光条、反光胶带、皮革、反光丝线等，用于生产各种具有反光效果的安全服装、安全标识、运动用品、时尚服装等。

- 推荐使用粘度较高的油墨，也可根据印刷速度调节粘度。
- 可选用金属色（如银色）的底色来增加反光效果，建议印刷在浅色的承印物上。也可将反光油墨印刷在其他效果的基材（比如镭射效果）上以达到意想不到的效果。
- 通常情况下，建议添加重量比为30-50%，可根据预期效果调整比例。
- 油墨的厚度应根据所选反光粉的粒径来控制，尽量使反光粉半露在在印层表面以达到最佳的反光效果。如果反光粉完全“埋入”油墨中，反光效果将大大减弱。反光油墨表面可再添加一道透明保护层以保护反光粉掉落，增加水洗牢度，但也会一定程度上影响反光效果。（需要注意的是，反光层的水洗牢度与反光粉本身关系不大。）
- 不可研磨，以免破坏反光粉颗粒，简单的分散或者搅拌均匀即可。
- 反光粉比重较大，容易沉淀，建议使用粘度较高的油墨介质，或者添加防沉淀助剂。施工前还需搅拌均匀。

### Applications in silk screen printing inks

Our retro-reflective powders can be incorporated in to screen printing inks on different substrates, to make retro-reflective films, sheets, tapes, leathers even threads for safety wears, safety signs, sports/fashion wears that are needed to be seen in low light or night conditions.

- Use high viscosity of inks. Viscosity could be adjusted by using a diluting agent based on printing speed.
- An optional silver base print (for example aluminum print) under the retro-reflective layer to enhance the reflection effect. It is better used lighter color printed surface but other colors or effects (like holographic) to achieve unexpected effects.
- Generally use about 30-50% parts of retro-reflective powder by weight into the clear inks. The powder loading can also be adjusted according to the effect that is needed.
- Film thickness should be adjusted to let the powder half exposed on the surface to achieve maximum retro-reflection effect. If the powder is totally "buried" in the paint, the retro-reflective effect will be diminished.
- A clear overprint is optional to protect the powder from peeling off but this will decrease the retro-reflection to some degree.
- To minimize settling, use a viscous vehicle and/or anti settling agents. Also stir well before printing.