

MERCK

**THE
WAY
TO KEEP IT BRILLIANT**

Iriodin® 119/103/6163 WAY
for plastic applications



 **iriodin®**



BRILLIANT. RESISTANT. ENDURING.

STABILITY AGAINST:

- + WEATHERING
- + CHEMICALS
- + MECHANICAL IMPACT
- + TEMPERATURE UP TO 800°C

Due to environmental conditions, the color and physical properties of beautifully designed products degrade over time. To fulfill the requirements of a weather resistant, light stable, chemically inert and thermally stable pigment, is quite a tall order for any colorant. This has been achieved with the WAY technology, enabling metallic effects to be generated for a wide range of polymers used in harsh environment applications while having minimal reactivity with that system. The new Iriodin® WAY pigments will preserve their crystal clear and shiny appearance almost infinitely.



YOUR WAY TO LONG-TERM STABILITY

INSIGHT

Plastic components used in demanding applications need to be extremely environmental and UV stable. The choice of polymer for these applications can be as important as any colorant added to a finely tuned and complex polymer and additive system. Most colorants used for metallic shine are influencing the polymer matrix negatively due to their natural level of photoactivity. When it comes to recycling, the level of degradation of the polymer determines whether it is suitable for recycling or not.

BENEFIT

The WAY encapsulation is a breakthrough in the area of stabilized pearl effect pigments as it is an inorganic coating. This avoids any instability of color and polymer matrix and makes it a perfect fit for plastic processing technologies as the inorganic encapsulation withstands all levels of extrusion temperature.

It is the only technology on the market with reduced photoactivity and temperature resistance. Long-term stability in color and strength are improved and the pigment protection minimizes the reactivity with the polymer-additive system. Protected plastic lasts longer in the correct composition.

REASON TO BELIEVE

The encapsulation of the WAY pigment is an **inorganic ceramic-like coating** which resists plastic processing temperatures. WAY will help the whole system to withstand heat, humidity, UV-radiation, mechanical impact, chemicals and your beautifully designed products will preserve its color and physical properties in the long run.

The WAY stabilization complies with regulatory standards as it works with inorganic chemistry. Therefore, the WAY pearl effect pigments are suitable for use in food packaging*, toys or electronic devices. For the first time application requirements and product resilience are compatible.

(*suitable in EU and China)

BENEFIT FROM WAY-TECHNOLOGY IN...

... ARCHITECTURE

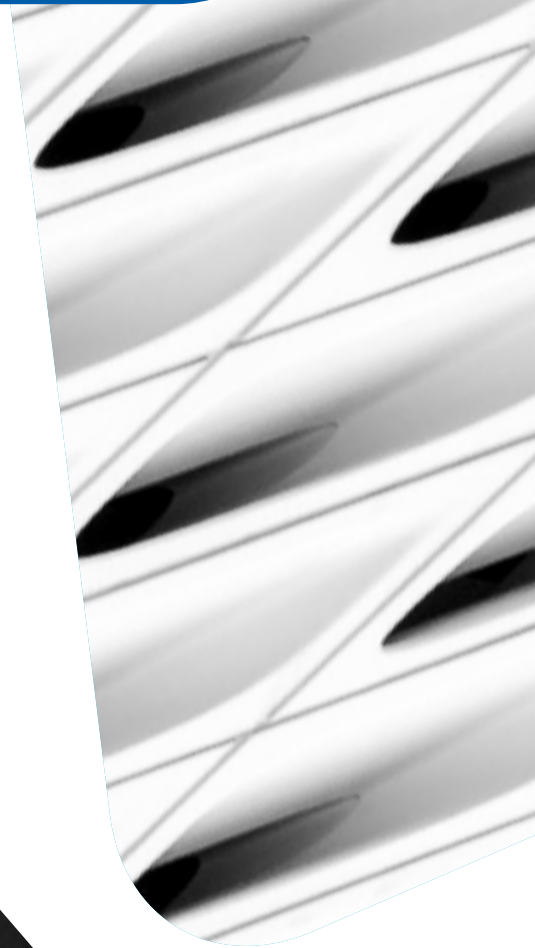
Thanks to their durability and weather stability, WAY pigments are especially suitable for demanding architectural applications. Their heat resistance enables carefree plastic processing while sustaining freedom of design from precious white to modern silver. Even vivid colors can be realized due to their neutral color.

...TRANSPORTATION

WAY pigments can facilitate the use of mass colored trim as well as interior parts. With WAY the plastic can be just as resilient as a coated surface. This saves cost and reduces carbon footprint.

... FURNITURE

Chemical resistance while fulfilling the requirements for migration behavior predestine WAY-pigments for the use in kitchen and outdoor furniture. Even toys can be styled in magical colors without jeopardizing their long-term stability.



DETAILS

REGULATORY BENEFITS

- Meets European standard for food packaging materials regarding heavy metal content, AP (89) 1 and German BfR recommendation
- Is compliant to European Toy Regulation 2009/48/EC and can safely be used for Toys Cat. III.
- Meets packaging waste regulations CONEG (U.S.) and European Directive 94/62/EC, as well as the ROHS requirements
- Meets purity requirements for electrical and electronic equipment (2011/65/EC)
- REACH compliant! All components of the pigment Iriodin® 119 WAY are in compliance with Regulation 1907/2006/EC (REACH)

PRODUCT DATA

Iriodin®	119 WAY	103 WAY	6163 WAY
Name	Polar White	Rutile Sterling Silver	Icy White Shimmer
Item N°	1.41113	1.41478	1.41481
Package sizes	250 g, 1 Kg, 25 Kg	250 g, 1 Kg, 25 Kg	150 g, 1 Kg, 25 Kg
Color	Silver-white	Silver-white	Silver-white
Particle size distribution ¹	5-25 µm	10-60 µm	20-180 µm

PERFORMANCE DATA

Iriodin®	119 WAY	103 WAY	6163 WAY
Thermal stability	Up to 800°C, non-flammable		
Lightfastness (ISO 105 B01) ²	>8		
Photoactivity	≥ 3 Iriodin WAY has an inorganic coverage of its TiO ₂ surface which hinders photoactivity. Photoactivity is an indication of the catalytic activity of the TiO ₂ surface which leads to degradation of the polymer matrix. Photoactivity and weatherability of the pigment are mutually interactive.		
Yellowing in the dark	< 1.0 With a stabilized TiO ₂ surface of the Iriodin 119 WAY this reaction is not seen or strongly hindered. Yellowing in the dark is a reversible reaction of the TiO ₂ in combination with phenolic antioxidants in the absence of light. Strength and speed of the reaction depend on the reactivity of the phenolic group and the TiO ₂ surface.		
Weathering Resistance (ISO 11341)	Weathering resistance is tested using accelerated testing in a weather chamber with xenon light at elevated temperatures, where irrigation and light exposure alternate. The test samples contain 1% pigment in PMMA. The weather cycle is according to DIN EN ISO 11341 for 1000h.		

Iriodin® 119 WAY Iriodin® 6163 WAY

Iriodin® 103 WAY

¹ Laser diffraction measurement

The information on this page is typical technical data to characterize the pigment. These values are not meant as specifications and they do not have binding character. The product specification is available separately, on request.

² Suntest, tested at 1% in HDPE

Products are warranted to meet the specifications set forth on their label/ packaging and/or certificate of analysis at the time of shipment or for the expressly stated duration. Merck provides information and advice on application technologies and relevant regulations based upon its current knowledge and opinion. MERCK MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE REGARDING OUR PRODUCTS, THEIR APPLICATION OR ANY INFORMATION PROVIDED IN CONNECTION THEREWITH. Merck shall not in any event be liable for incidental, consequential, indirect, exemplary or special damages of any kind resulting from any use or failure of the products. Customer is responsible for and must independently determine the suitability of Merck's products for its products, intended use and processes. The foregoing information and suggestions are also provided without warranty of non-infringement as to intellectual property rights of third parties and shall not be construed as any inducement to infringe the rights of third parties. Customer shall be responsible for obtaining any applicable third party intellectual property licenses. All sales are subject to Merck's complete Terms and Conditions of Sale. Prices are subject to change without notice. Merck reserves the right to discontinue products without prior notice.

Merck, the vibrant M and Iriodin are trademarks of Merck KGaA, Darmstadt, Germany. All other trademarks pertain to their proprietors.

© 2019 Merck KGaA, Darmstadt, Germany and/or its affiliates. All Rights Reserved.

Merck KGaA

Performance Materials
Surface Solutions
Frankfurter Str. 250
64293 Darmstadt, Germany
Phone +49 6151 72-3060
Fax +49 6151 72-91 3060
E-Mail: plastics@merckgroup.com
merck-pigments.com

EMD Performance Materials Corp.

Surface Solutions
1200 Intrepid Ave, Suite 300
Philadelphia, PA 19112, USA
Phone +1 484 652-5648
Fax +1 484 652-5664
E-Mail: pps-us@emdgroupp.com
emdpigments.com
A subsidiary of Merck KGaA,
Darmstadt, Germany

Merck Ltd.

Performance Materials
Surface Solutions
ARCO Tower, 5F
1-8-1, Shimomeguro,
Meguro-ku
Tokyo 153-8605, Japan
Phone +81 3 5434-6257
Fax +81 3 5434-4708
E-Mail: pti@merckgroup.com
merck-performance-materials.jp
A subsidiary of Merck KGaA,
Darmstadt, Germany