

 **Geoflake**[®]
GLITTERING MICA FLAKES

plastic free glitter effects for cosmetics

Environmental-friendly alternative for polyester glitter

The innovative product range Geoflake® is developed by GEOTECH as a sustainable alternative for polyester glitter.

The basic structure of Geoflake® is a coarse, ultra-thin platelet of coated synthetic mica. The new range consists of synthetic mica flakes coated with titanium dioxide, iron oxide and colourants.

The Geoflake® range contains a stunning amount of 15 products. Silver, White, Red Gold, Royal Blue, Green, Lavender, Salmon and Rainbow are the eight colours available in two different particle sizes. The available sizes are XL, with an average of 350 micron and XXL, with an average of 750 micron.

The narrow particle size distribution achieved by an innovative production process makes Geoflake® products unique. It creates an optical effect which is similar to precision cut polyester glitter.

Geoflake® glittering mica flakes are non-toxic and comply to the main regulations for cosmetics. Some colour coated flakes have a few restrictions in certain areas due to the used colourants. The titanium dioxide and iron oxide coated Geoflake products are UV, water- and solvent resistant. The coloured Geoflake products are a bit more sensitive, depending on the application some special attention is required.

Product benefits

- Sustainable PET free glitter flakes
- Smooth skin and nail feel thanks to 2 micron thin particles
- Controlled unique narrow particle size distribution
- Endless styling flexibility

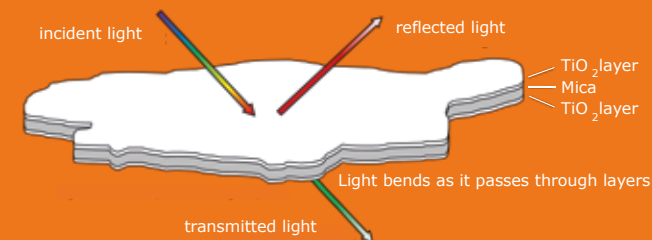
Applications

We recommend to use this product line for the following applications:



The effect

The colour of the Geoflake® pigments is obtained by interference, a phenomenon that occurs when visible light passes through thin layers with different refractive indices.



Synthetic mica is the base for our Geoflake® pigments and has a lamellar structure which is perfect for obtaining the interference effect. The transparent flakes are coated on all sides with a thin layer of titanium dioxide and/or iron oxide, effectively helping to reflect and bend the light. The coloured Geoflake pigments have additional colourants added to the surface.



Art. nr.	Product name	Particle size	Effect
1950008	Geoflake Crystal Silver XL	200 – 500 micron	Bright glittering silver
1950007	Geoflake Crystal White XL	200 – 500 micron	Flashing glittering white
1950507	Geoflake Crystal White XXL	500 – 1000 micron	Flashing scattering white
1950006	Geoflake Crystal Rainbow XL	200 – 500 micron	Dazzling glittering interference
1950506	Geoflake Crystal Rainbow XXL	500 – 1000 micron	Dazzling scattering interference
1950005	Geoflake Crystal Red Gold XL	200 – 500 micron	Intense glittering gold
1950505	Geoflake Crystal Red Gold XXL	500 – 1000 micron	Intense scattering gold
1950001	Geoflake Crystal Salmon XL	200 – 500 micron	Vivid glittering salmon
1950501	Geoflake Crystal Salmon XXL	500 – 1000 micron	Vivid scattering salmon
1950004	Geoflake Crystal Lavender XL	200 – 500 micron	Brilliant glittering lavender
1950504	Geoflake Crystal Lavender XXL	500 – 1000 micron	Brilliant scattering lavender
1950003	Geoflake Crystal Royal Blue XL	200 – 500 micron	Beaming glittering blue
1950503	Geoflake Crystal Royal Blue XXL	500 – 1000 micron	Beaming scattering blue
1950002	Geoflake Crystal Green XL	200 – 500 micron	Blazing glittering green
1950502	Geoflake Crystal Green XXL	500 – 1000 micron	Blazing scattering green



General formulation do's and don'ts

Avoid high shear or grinding

The synthetic fluorophlogopite based Geoflake® glittering mica flakes are available in the sizes XL, with an average of 350 micron and XXL, with an average of 750 micron. Synthetic Fluorophlogopite is composed of magnesium aluminum silicate sheets, weakly bound together. Surfaces held together by relatively weak bonds will tend to break more easily than those held together by strong bonds. High shear and grinding can break the large Geoflake® particles into smaller pieces. For improved handling pre-wetting the pigments is recommended by making a premix in vehicle (oils or solvents) under slow stirring conditions.

Colourants might bleed

To obtain the strong and vibrant Geoflake® Crystal Royal Blue, Geoflake® Crystal Green, Geoflake® Crystal Lavender and Geoflake® Crystal Salmon colourants are used. Colourants might bleed. "Bleeding" or "Migrating" refers to a colour which tends to migrate over from one place to another. It is a common problem for colourants when used in water based formulations like gels, emulsions, creams or lotions. The Geoflake® Crystal Silver, Geoflake® Crystal White, Geoflake® Crystal Red Gold and Geoflake® Crystal Rainbow contain inorganic pigments and therefore do not bleed or migrate in water based formulations.

High oil absorption

Geoflake® glittering mica flakes have a high oil absorption. The oil absorption of a pearlescent pigment is a practical measure of the surface and particle shape of the pigment. In general it is the amount of oil that it takes to saturate 100g of the pearlescent pigment. The larger the material's surface area the higher the oil absorption value of the pigment and the more binder it will require to bind it. Also here: for improved handling pre-wetting the pigments is recommended by making a premix in vehicle (oils or solvents) under slow stirring conditions.

UV stability

The Geoflake® glittering mica flakes which contain organic colourants are sensitive to UV light.

Finished product	Level of use (recommendation)
Hair styling gel	0,01 - 0,1 %
Shower gel	0,01 - 0,1 %
Eye shadow gel	15 - 20 %
Skin gel	0,05 - 0,1 %
Loose powder	up to 100 %
Lipstick	12 - 20 %
Lip balm / gloss	3 - 5 %
Lip lacquer	10 - 15 %
Shampoo	0,1 - 1 %

Summary

The stability results are formulation specific even within a particular application. The order of addition and the combination of other ingredients may impact the stability of the Geoflake® glittering mica flakes in an emulsion or water containing system. It is recommended to keep the homogenization times to a minimum.

The titanium dioxide and iron oxide coated Geoflake® products are UV, water- and solvent resistant. The coloured Geoflake products are more sensitive, depending on the application.



Formulation guideline | Nail polish

Product: Nail Polish
Code: GL-200904
Special effect pigment: Geoflake Crystal White XL

Product name	INCI name	% WT.	Supplier
Peel Off Base 605		88.00	Centre 7
Geoflake Crystal White XL	Synthetic Fluorophlogopite Titanium Dioxide	4.00	Geotech International B.V.
Iron Blue (15%)		3.00	Centre 7
Yellow 10 (18%)		5.00	Centre 7

Procedure

1. Mix all the ingredients until homogeneous;
2. Pour into nail polish bottles.



Formulation guideline | Lip gloss






Product: Lip gloss
 Code: GL-200910
 Special effect pigment: Geoflake Crystal Red Gold XL | Geoflake Crystal Lavender XL | Geoflake Crystal Green XL |
 Geoflake Crystal Salmon XL | Geoflake Crystal Royal Blue XL

Product name	INCI name	% WT.	Supplier
Phase A			
Versagel ME 750	Hydrogenated Polyisobutene (and) Ethylene Propylene Styrene Copolymer (and) Butylene Ethylene Styrene Copolymer	66.90	Calumet Penreco
Jojoba Oil	Simmondsia Chinensis (Jojoba) Seed Oil	2.20	Sigma Oil Seeds
Caprylyl Trimethicone	Caprylyl Trimethicone	7.80	
Stearyl Dimethicone	Stearyl Dimethicone	3.60	
Nexbase 2002	Hydrogenated Polydecene	4.50	Neste Oil
Crodamol IPM	Isopropyl Myristate	5.00	Croda
Phase B			
Geoflake Crystal Red Gold XL	Synthetic Fluorphlogopite Titanium Dioxide CI 77491	2.00	Geotech International B.V.
Geoflake Crystal Lavender XL	Synthetic Fluorphlogopite Titanium Dioxide CI 45410 CI 42090	2.00	Geotech International B.V.
Geoflake Crystal Green XL	Synthetic Fluorphlogopite Titanium Dioxide CI 42090 CI 19140	2.00	Geotech International B.V.
Geoflake Crystal Salmon XL	Synthetic Fluorphlogopite Titanium Dioxide CI 16035	2.00	Geotech International B.V.
Geoflake Crystal Royal Blue XL	Synthetic Fluorphlogopite Titanium Dioxide CI 42090	2.00	Geotech International B.V.

Procedure

1. Combine all ingredients from phase A and heat to 85°C;
2. Add phase B to phase A and mix until homogeneous;
3. Pour into lip gloss container.



Art. nr.	Product name	 Lip area	 Eye area	 Nail	 External	 Rinse off	Synthetic Fluorophlogopite	Titanium Dioxide (CI 77891)	Tin Oxide	Iron Oxide Red (CI 77491)	FD&C Red 40 Al Lake (CI 16035)	D&C Red 27 Al Lake (CI 45410)	FD&C Blue 1 Al Lake (CI 42090)	FD&C Yellow 5 (CI 19140)
1950008	Geoflake Crystal Silver XL	●	●	●	●	●	X	X	X					
1950007	Geoflake Crystal White XL	●	●	●	●	●	X	X						
1950507	Geoflake Crystal White XXL	●	●	●	●	●	X	X						
1950006	Geoflake Crystal Rainbow XL	●	●	●	●	●	X	X	X					
1950506	Geoflake Crystal Rainbow XXL	●	●	●	●	●	X	X	X					
1950005	Geoflake Crystal Red Gold XL	●	●	●	●	●	X	X		X				
1950505	Geoflake Crystal Red Gold XXL	●	●	●	●	●	X	X		X				
1950001	Geoflake Crystal Salmon XL	●	○	●	●	●	X	X	X		X			
1950501	Geoflake Crystal Salmon XXL	●	○	●	●	●	X	X	X		X			
1950004	Geoflake Crystal Lavender XL	◎	◎	◎	◎	◎	X	X	X			X	X	
1950504	Geoflake Crystal Lavender XXL	◎	◎	◎	◎	◎	X	X	X			X	X	
1950003	Geoflake Crystal Royal Blue XL	●	●	●	●	●	X	X	X				X	
1950503	Geoflake Crystal Royal Blue XXL	●	●	●	●	●	X	X	X				X	
1950002	Geoflake Crystal Green XL	●	●	●	●	●	X	X	X				X	X
1950502	Geoflake Crystal Green XXL	●	●	●	●	●	X	X	X				X	X

- Global approval
- European and United States approval
- ◎ European and Japanese approval



Available packaging

Nett weight	Gross weight	Package size L x W x H
5 kg	6 kg	35 x 18 x 21 cm
25 kg	27 kg	37 x 37 x 45 cm

Packed in a plastic bag in a cardboard box.

Shelf life

120 months original packaging stored in a closed box under dry conditions.

Samples

Approx. 50 grams samples are available free of charge.

Product data

Product data sheets and additional technical product information are available online. To get access please send an email to marketing@geotech.nl and ask for an account.



About us

Geotech International B.V., based in Haarlem, The Netherlands, is a dynamic company focusing on the development, production and distribution of special effect pigments. The owners family has a background in the industry with over 40 years of experience. Since 1999 the company is managed by the third generation.

GEOTECH's special effect pigments are being used globally in the cosmetics, plastics, coatings & paints, printing and arts & crafts industry.

Disclaimer

All information and samples provided by GEOTECH are given in good faith and without warranty. Our advice does not release you from the obligation to verify the information provided and to test our products as to their suitability for the intended processes and uses. The application, use and processing of our products and the products manufactured by you on the basis of our technical advice are beyond our control and therefore entirely your own responsibility.



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