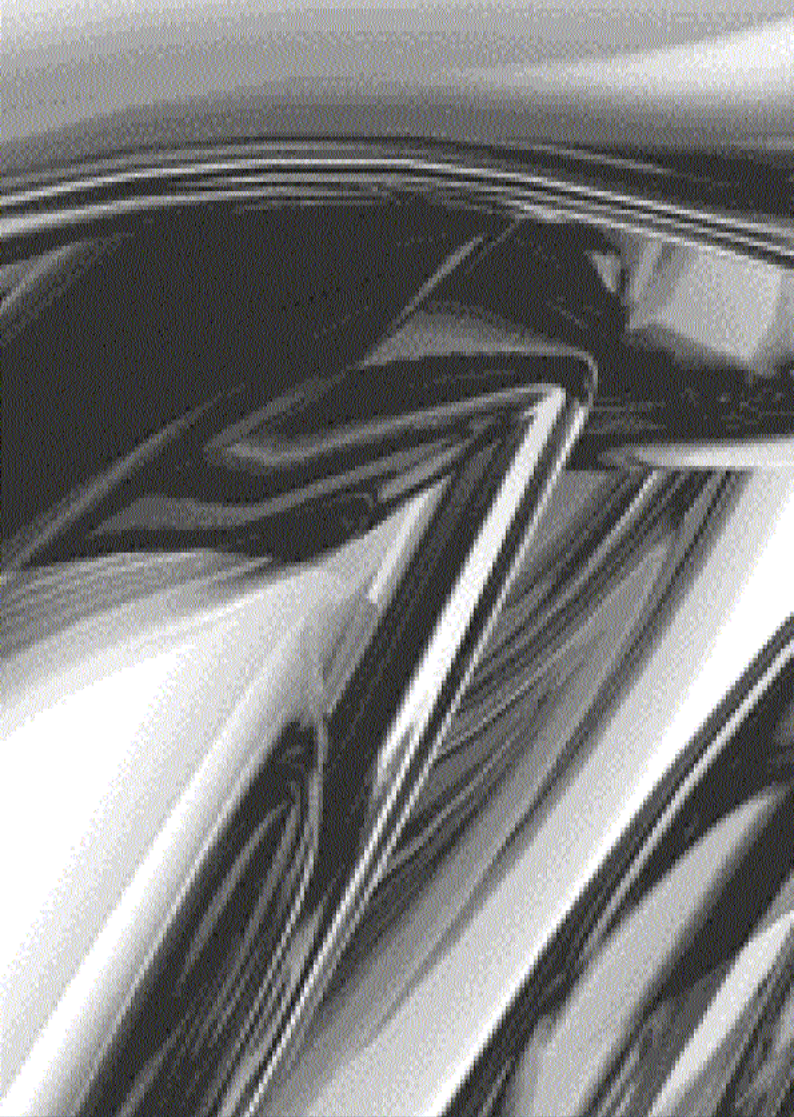




SILBERLINE®

The Global Supplier of Effect PigmentsSM



Dispersion Guidelines

For granular products

www.silberline.com



Dispersion Method

Dispersion Guidelines for granular products

Silberline provides the Graphic Arts and Printing Ink market with high quality aluminium pigments.

Offering a wide range of aesthetic effects, Silberline pigments are suitable for all printing applications. From gun-metal greys to brilliant reflective silvers, lustrous golds to metallic greens the options are endless for achieving that eye-catching, even breathtaking, appearance. Our pride in our manufacturing technologies and product innovation means that we are at the forefront of aluminium pigment production.

Granular products are a popular, safe and environmentally friendly way for the ink manufacturer to use aluminium pigments in their products. Available as pigments for solvent, water-based or UV inks these granular products offer a number of benefits to the customer and end-user.

- **Non-dusting – safe and easy to handle**
- **Solvent free – low VOC**
- **Low odour**
- **High metal content**
- **Excellent shelf-life**
- **Non-hazardous for transport**

Aluminium pigments need to be treated with care, so as not to damage the delicate flakes. When manufacturing inks a low shear mixer should be used, preferably with slow paddle blades.

Damage to an aluminium flake can cause a significant decrease in brilliance and opacity of the printed ink. For pigments protected for water-based or UV applications flake damage can have further detrimental effects by potentially increasing gassing or viscosity as unprotected aluminium is exposed to the system. Inconsistent results can also be achieved in the finished ink if the granule is not dispersed correctly.

To get the best and most consistent effect achievable from Silberline aluminium granule products the following simple dispersion method is recommended.



Together we brighten our world!

Recommended Instructions

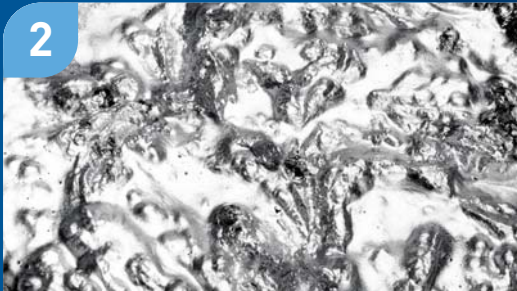


1



A known weight of granule is weighed out and placed into the mixing vessel.

2



Add to the granules an equal weight of solvent and allow a minimum of 30 minutes soaking. As soon as the solvent is added the granules will visibly start to disperse as the solvent wets out each flake.

3



After a minimum of 30 minutes gently stir the mixture with low shear mixing, preferably using a paddle blade covering 65-70% of the vessel diameter, until a homogeneous paste is obtained.

4



Once a homogeneous paste is achieved then the ink can be finished by adding the necessary resins and additives in portions with gentle mixing.

For water-based and UV systems the same method is used but 'solvent' is replaced by 'water' or 'low viscosity monomer' respectively.



SILBERLINE®

The Global Supplier of Effect PigmentsSM

Silberline Global Headquarters

130 Lincoln Drive
PO Box B
Tamaqua, PA 18252

Phone: 570-668-6050
Toll-Free (USA & Canada):
800-348-4824
Fax: 570-668-0197
E-Mail: order@silberline.com

**Ernest Scheller III Center for
Technical Functions & Advanced
Manufacturing**

36 Progress Avenue
PO Box 152
Tamaqua, PA 18252

Phone: 570-668-2773
Toll-Free (USA & Canada):
877-492-7881
Fax: 570-668-4227

Silberline Limited

Banbeath Road
Leven, Fife
Scotland KY8 5HD

Phone: 44-1-333-424734
Fax: 44-1-333-421369
E-Mail: euinfo@silberline.com

Silberline Asia Pacific Inc.

34 Kian Tech Drive
Singapore 628857

Phone: 65-6411-0170
Fax: 65-6262-0020
E-Mail: sapmkt@silberline.com

Silberline Brasil Limitada

Rue Dr. Diogo de Faria 55, Cj. 34
Vila Clementino
Sao Paulo – Cep. 04037-000
Brazil

Phone: 55-11-3562-2780
Fax: 55-11-3562-2783

**Silberline Pigmentos,
SRL de CV**

Blvd. Atlxycayotl
Torre Bosques II #5320-200
San Andres Cholula
Puebla – CP 72810
Mexico

Phone: 52-222-2252774
Fax: 52-222-2252775

Silberline Mauritius Ltd.

(Shanghai Representative Office)
Unit 411, 1440 Yan An Road
Shanghai, P.R. China 200040

Phone: 86-21-6103-1686
Fax: 86-21-6103-1638

www.silberline.com



©2009 Silberline



All statements, information and data combined herein are believed to be accurate and reliable, but are not to be taken as a guarantee, expressed warranty or an implied warranty of merchantability or fitness for a particular purpose or use, all of which are hereby disclaimed, or as a representation express or implied, for which Silberline would assume legal responsibility. Such statements, information and data are offered solely for your consideration, investigation and verification. The information and products referred to herein are intended for use only by skilled persons at their own risk. Silberline hereby disclaims liability for consequential, incidental and special damages. Statements or suggestions concerning possible use for the products referred to herein are made without representation or warranty that any such use is free of patent infringement and are not recommendations to infringe upon any patent. Silberline makes no warranty and assumes no responsibility or liability with respect to the suggestions and data contained herein. Individual product information and material safety data sheets are available from Silberline upon request and must be referred to because of potential serious hazards associated with the use of these products. Assistance in grade selection can be obtained through your local Silberline representative. For product formulations and assistance, contact Silberline's Technical Service/Product Applications Department. Silberline makes no guarantee, warranty or implied warranty of merchantability or fitness for a particular purpose or use regarding the mixture of the products referred to herein with other ingredients, whether or not performed in accordance with guidelines established by Silberline, all of which are hereby disclaimed.