



SILBERLINE®

The Global Supplier of Effect Pigments™



**METALLIC
EFFECT
PIGMENTS
FOR THE
PLASTICS
INDUSTRY**

Plastics Product Data and Selection Guide

www.silberline.com

An
Unwavering
Commitment
to Innovation
and Quality



The year was 1945. The aluminium industry pioneer was Ernest Scheller. The vision was to create a company that would provide innovative, superior quality effect pigments and customised service, with unyielding integrity. Recognised today as a world leader in the manufacture and supply of aluminium effect pigments, Silberline is that company envisioned by Ernest Scheller over 65 years ago.

As a family-owned business with Lisa Jane Scheller as Chairman our commitment to innovation and business integrity remains integral to our operations today. With over 700 employees worldwide and manufacturing, technical and research centres in Europe, Asia and North America, Silberline is a global supplier of effect pigments for the automotive, graphic arts and printing inks, plastics and industrial coatings industries.

Through our highly-experienced professional account managers, technical service representatives, and a global network of independent agents and distributors, we provide pigments that meet the needs of our valued customers who expect brilliant visual effects, excellent performance, expanded technical capabilities, and the highest quality products.



High Quality and Diverse Visual Effects



Silberline products for plastics have a proven track record of consistent high quality and are backed by a strong technical service and support team. The diversity of visual effects that can be created with Silberline metallic pigments is unlimited. Our products can be used within the polymer to create the high-gloss, high-definition appearance of a painted part without the concerns of VOC or overspray. Aesthetics can be enhanced when combined with chromatic pigments and dyes to provide pearlescent, copper, gold, bronze, and even stoneware effects.



Aluminum Pigment Selection



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Cornflake Type

This class of pigments has wide particle size distribution ranges and offers excellent hiding at low loading levels.

Regular Grades—are based on leafing aluminium pigments with a broad particle size distribution.

Reflective Grades—are based on medium size non-leafing aluminium pigments with particle size distribution ranges more controlled than the Regular grades.

Polished Cornflake

The polished cornflake grades are non-leafing pigments manufactured to be brighter and whiter than a standard cornflake.

SPARKLE SILVER®—fine to medium size grades with a controlled particle size distribution. These finer pigments create a metallic pigment effect.

Glitter—coarse to very coarse grades with a narrow particle size distribution to offer aesthetics similar to chopped foil in a colour system.

High Sparkle—coarse to very coarse products with a broader particle size distribution than the Glitter grades. This class creates a high metallic sparkle in a colour.

Silver Dollar Flakes

The Silver Dollar flakes are differentiated from the Cornflakes by a polished surface with smoother edges known as a lenticular geometry. These grades have a highly controlled particle size distribution that produce a clean bright appearance.

SPARKLE SILVER Premier—fine to medium lenticular grades with a slightly broader distribution for better coverage than the SPARKLE SILVER ULTRA® grades.

Aluminum Pigment Selection



SPARKLE SILVER ULTRA—the cleanest and brightest of all lenticular grades with the smoothest patina capable of producing a look similar to anodized aluminium.

TUFFLAKE® Premier

Plastics containing aluminum pigments may be subject to tremendous shear forces during processing. These mechanical forces can have the tendency of dulling the metallic appearance of the final product by breaking and deforming the individual aluminum flakes. Silberline's TUFFLAKE line of pigments is specifically engineered to resist these mechanical forces and maintain their targeted appearance.

TUFFLAKE Premier 018-30-E1 – clean, bright, lenticular grade with a smooth patina.

Spherical Geometry

These grades were developed to provide aluminium pigments with two novel effects:

- 1) flow line mitigation and
- 2) the potential for creating alluring and novel aesthetics in plastics.

These characteristics are created by changing the shape of the aluminium pigment from the traditional 2-dimensional “flake” geometry to a 3-dimensional “sphere”, producing a shimmering 3-dimensional pinpoint sparkle effect.

Extra Sparkle Series—an expanding class of new effect pigments.



Carrier Selection



SILVEX®—Dampened Powder

In 1959, Silberline introduced aluminium pigments that were wetted with a high boiling plasticizer carrier with very low residual solvent content. These could be safely used in most polymer processing applications, replacing non-recommended dry and solvent paste aluminium pigments.

CARRIER DESCRIPTION

SILVEX C Grades—aluminium pigments that use Mineral Oil as a carrier in a concentration from 10–30% to form a dampened powder which has proven to be safe in typical processing equipment.

SILVEX DOA Grades—aluminium pigments that use dioctyl adipate (DOA) as a carrier in a concentration of 10–30% to create a safe dampened powder. DOA is commonly used for PVC applications due to its excellent compatibility with the base resin.

COMPATIBILITY WITH POLYMERS

These carriers are used because they boil at a temperature higher than many polymers are processed and are used from room temperature up to 402°F [205°C]. SILVEX grades can be used for liquid systems such as liquid colour concentrates, plastisols, caulking, gel coats, and some two-part thermoset materials. Some processors use SILVEX in resins compounded above 402°F [205°C] during which the carrier is removed via vacuum devolatilization. This allows the aluminium pigment to be incorporated into the polymer with the least affect on physical properties on polymers like Nylon and Polycarbonate.

SILVEX C Grades—Mineral Oil is primarily used in Polyolefins, Polystyrene and Silicones.

SILVEX DOA Grades—Dioctyl Adipate is primarily used in Plastisols, Flexible PVC and Rigid PVC.

Carrier Selection



SILVET® - Solid Carrier

Silberline introduced SILVET pigments in 1982. This technology provides aluminium pigment in a low-dusting, low-VOC pellet or granule for a variety of polymers. Suitable for an extensive range of functional and aesthetic applications, the high metal content and carrier types allow the formulator flexibility with selected designs. SILVET products are currently offered as three types: SILVET E, SILVET E1, and SILVET P.

CARRIER DESCRIPTION

SILVET E Grades—produced with a polyethylene wax carrier typically at 20%. Carried in a 3 millimeter compact rod form, these grades offer ease of handling, low residual solvent content, and low dusting.

SILVET E1 Grades—produced with a polyethylene wax carrier, typically at 30%. SILVET E1 pellets are typically 1.5 to 2.5 millimeters in diameter and possess a lower density than related SILVET E grades.

SILVET P Grades—produced with an acrylic carrier, typically at 20%. SILVET P granules are manufactured with a typical diameter of 2.5 millimeters which results in highly concentrated pigment.

COMPATIBILITY WITH POLYMERS

Each SILVET carrier is compatible with a wide range of high temperature thermoplastic systems.

SILVET E and SILVET E1 Grades—achieve the best compatibility with Polyolefins, Polyamides, and show some use with Engineering Thermoplastics.

SILVET P Grades—suited for Engineering Thermoplastics such as PC, ASA, ABS, PMMA, and also has some compatibility with PVC and Nylons.

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Regular Series - Leafing	GEOMETRY	D (50%) MICRONS	FLASH POINT (°F)	CARRIER	% CARRIER
SILVEX 113-20-C	Cornflake	19	430	MO	20
SILVEX 115-20-DOA	Cornflake	19	402	DOA	20
SILVET 110-20-E	Cornflake	19	-	PE Wax	20
SILVEX 223-20-C	Cornflake	14	430	MO	20
SILVEX 225-20-DOA	Cornflake	14	402	DOA	20
SILVET 220-20-E	Cornflake	9	-	PE Wax	20
LT-12278	Cornflake	9	-	PE Wax	25
SILVEX 333-20-C	Cornflake	8	430	MO	20
SILVEX 335-20-DOA	Cornflake	8	402	DOA	20
SILVET 330-20-E	Cornflake	8	-	PE Wax	20
Reflective Series	GEOMETRY	D (50%) MICRONS	FLASH POINT (°F)	CARRIER	% CARRIER
SILVEX 620-25-C	Cornflake	21	430	MO	25
SILVEX 620-25-DOA	Cornflake	21	402	DOA	25
SILVET 620-20-E	Cornflake	21	-	PE Wax	20
SPARKLE SILVER® Series	GEOMETRY	D (50%) MICRONS	FLASH POINT (°F)	CARRIER	% CARRIER
SPARKLE SILVEX 760-20-C	Polished Cornflake	55	430	MO	20
SPARKLE SILVEX 760-20-DOA	Polished Cornflake	55	402	DOA	20
SPARKLE SILVET 760-20-E	Polished Cornflake	55	-	PE Wax	20
SPARKLE SILVEX 793-20-C	Polished Cornflake	35	430	MO	20
SPARKLE SILVEX 795-20-DOA	Polished Cornflake	35	402	DOA	20
SPARKLE SILVET 790-20-E	Polished Cornflake	35	-	PE Wax	20
SPARKLE SILVEX 883-20-C	Polished Cornflake	27	430	MO	20
SPARKLE SILVEX 885-20-DOA	Polished Cornflake	27	402	DOA	20
SPARKLE SILVET 880-20-E	Polished Cornflake	27	-	PE Wax	20
SPARKLE SILVEX 963-30-C	Polished Cornflake	14	430	MO	30
SPARKLE SILVEX 965-30-DOA	Polished Cornflake	14	402	DOA	30
SPARKLE SILVET 960-25-E	Polished Cornflake	14	-	PE Wax	25
SPARKLE SILVET 960-20-P	Polished Cornflake	14	-	Acrylic	20
Glitter Series	GEOMETRY	D (50%) MICRONS	FLASH POINT (°F)	CARRIER	% CARRIER
SILVEX 430-15-C	Polished Cornflake	170	430	MO	15
SILVET 430-30-E1	Polished Cornflake	170	-	PE Wax	30
SILVEX 440-15-C	Polished Cornflake	83	430	MO	15
SILVET 440-30-E1	Polished Cornflake	83	-	PE Wax	30

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High Sparkle Series	GEOMETRY	D (50%) MICRONS	FLASH POINT (°F)	CARRIER	% CARRIER
SPARKLE SILVET 730-30-E1	Polished Cornflake	250	-	PE Wax	30
SPARKLE SILVEX 750-20-C	Polished Cornflake	90	430	MO	20
SPARKLE SILVET 764-30-E1	Polished Cornflake	80	-	PE Wax	30
SPARKLE SILVET 755-20-C	Polished Cornflake	64	430	MO	20
SPARKLE SILVER 755-20-DOA	Polished Cornflake	64	402	DOA	20
SPARKLE SILVET 755-30-E1	Polished Cornflake	64	-	PE Wax	30
LT-12279	Polished Cornflake	45	-	PE Wax	30
SPARKLE SILVET 790-30-E1	Polished Cornflake	45	-	PE Wax	30
SPARKLE SILVET 790-20-P	Polished Cornflake	45	-	Acrylic	20
SPARKLE SILVER Premier Series	GEOMETRY	D (50%) MICRONS	FLASH POINT (°F)	CARRIER	% CARRIER
SPARKLE SILVET Premier 860-30-E1	Silver Dollar	24	-	PE Wax	30
SPARKLE SILVET Premier 860-20-P	Silver Dollar	24	-	Acrylic	20
SPARKLE SILVEX Premier 890-20-C	Silver Dollar	20	430	MO	20
SPARKLE SILVET Premier 890-30-E1	Silver Dollar	20	-	PE Wax	30
SPARKLE SILVEX Premier 950-20-C	Silver Dollar	16	430	MO	20
SPARKLE SILVET Premier 950-30-E1	Silver Dollar	16	-	PE Wax	30
SPARKLE SILVET Premier 980-30-E1	Silver Dollar	12	-	PE Wax	30
SPARKLE SILVEX Premier 980-20-C	Silver Dollar	12	430	MO	20
SPARKLE SILVER ULTRA® Series	GEOMETRY	D (50%) MICRONS	FLASH POINT (°F)	CARRIER	% CARRIER
SPARKLE SILVEX Ultra 0017-20-C	Silver Dollar	17	430	MO	20
SPARKLE SILVEX Ultra 0017-20-DOA	Silver Dollar	17	402	DOA	20
SPARKLE SILVET Ultra 0017-30-E1	Silver Dollar	17	-	PE Wax	30
SPARKLE SILVET Ultra 0017-20-P	Silver Dollar	17	-	Acrylic	20
SPARKLE SILVEX Ultra 0011-20-C	Silver Dollar	11	430	MO	20
SPARKLE SILVEX Ultra 0011-20-DOA	Silver Dollar	11	402	DOA	20
SPARKLE SILVET Ultra 0011-30-E1	Silver Dollar	11	-	PE Wax	30
SPARKLE SILVEX Ultra 0011-20-P	Silver Dollar	11	-	Acrylic	20
SPARKLE SILVET Ultra 095-60-E1	Silver Dollar	9	-	PE Wax	60
SPARKLE SILVET Ultra 0008-60-E1	Silver Dollar	8	-	PE Wax	60
SPARKLE SILVEX Ultra 0008-20-C	Silver Dollar	8	430	MO	20

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TUFFLAKE® Premier Series	GEOMETRY	D (50%) MICRONS	FLASH POINT (°F)	CARRIER	% CARRIER
TUFFLAKE Premier 018-30-E1	Silver Dollar	18	-	PE Wax	30
Spherical Pigment Geometry	GEOMETRY	D (50%) MICRONS	FLASH POINT (°F)	CARRIER	% CARRIER
Extra SPARKLE SILVET 200-10-E1	Spherical	60	-	PE Wax	10
Extra SPARKLE SILVEX 300-10-C	Spherical	43	430	MO	10
Extra SPARKLE SILVEX 300-10-DOA	Spherical	43	402	DOA	10
Extra SPARKLE SILVET 300-10-E1	Spherical	43	-	PE Wax	10
Extra SPARKLE SILVET 300-10-P	Spherical	43	-	Acrylic	10
Extra SPARKLE SILVEX 400-10-C	Spherical	30	430	MO	10
Extra SPARKLE SILVEX 400-10-DOA	Spherical	30	402	DOA	10
Extra SPARKLE SILVET 400-10-E1	Spherical	30	-	PE Wax	10
Extra SPARKLE SILVET 400-10-P	Spherical	30	-	Acrylic	10
Extra SPARKLE SILVET 700-10-E1	Spherical	6	-	PE Wax	10

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