

SILCO additives for optimised coating systems

SILCO is focused on the development, production and marketing of innovative high performance additives for environmentally friendly coating systems. SILCO is serving the coatings and graphic arts industries with a cornucopia of tailor made and highly efficient additives by the following brands:







SILCO SPERSE

APEO-free high performance dispersants for water based and solvent based coating systems

SILCO GLIDE

high molecular weight silicone based slip additives for lacquers and paints

SILCO FLW

flow and levelling additives for various coating systems

SILCO WET

wetting additives for pigment and substrate wetting

- stabilisation of fillers, matting additives and metallics
- slurries
- pigment preparation
- best compatibility
- colour strength

- rub resistance
- slip
- anti blocking
- mar/ stain resistance
- flow/ levelling
- soft feel
- gloss

- anticissing
- colour strength
- compatibilizer







SILCO AF

antifoam additives for pigment grinding, inks and coating systems

SILCO OZ

open time extenders for water based lacquers and paints

SILCO PHOBE

hydrophobing additives for construction materials

- broad compatibility
- defoaming
- process optimising
- smooth surface

- better workability
- improves the open time and the wet edge of the paint
- water proofing
- dirt pick up resistance
- water repellency

SILCO SPERSE DISPERSING ADDITIVES

- stabilisation of fillers, matting agents and metallics
- slurries

- pigment preparation
- best compatibility
- colour strength

| SILCO SPERSE | special properties / main applications |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SDA-1 | Slurry-Dispersing-Agent: For the production of water based slurries of inorganic pigments and fillers for architectural paints and coatings. Alternatives to standard polyacrylate/polycarboxylate-salt dispersing additives. |
| SDA-2 | KOH neutralized form of SDA-1. Improved stability in alkaline pH value ranges. |
| SDA-3 | Especially recommended for dispersing inorganic coloured pigments. |
| HLD-5 | Mainly for water based wood and industrial coatings. |
| HLD-6 | High efficient with excellent price-performance ratio for water based pigment concentrates. |
| HLD-8 | High efficient universal dispersant for the area of pigment concentrates for water based industrial and architectural coatings. |
| HLD-8/R | Especially developed for the stabilisation of ${ m TiO}_2$ and fillers in water based lacquers and architectural coatings. |
| HLD-9/A | Especially for the use in binder-free pigment concentrates. This product is developed for the printing ink sector and meets a variety of food contact regulations. |
| HLD-11 | Especially for the use in binder containing dispersions. This product is developed for the printing ink sector and meets a variety of food contact regulations. |
| HLD-11/VS | Especially developed for the use in binder containing dispersions. Higher polarity in comparison to SILCO SPERSE HLD-11. |
| HLD-12 | Use in combination with amines for the production of resin-free industrial pigment concentrates. Based on 35% renewable raw material. Excellent stabilisation of metallic pigments. |
| HLD-1211 | Especially recommended for use in water based anti-corrosive primers and direct-to-metal systems as well as water based wood and furniture coatings. |
| HLD-16 | Use in polar solvent based NC, PVB and PVDC systems and also toluene based resinated systems. |
| HLD-18/AJ | Excellent wetting and dispersing agent for all types of organic pigments and carbon black in water based systems. |
| HLD-19/N | Dispersing additive/colour strength optimiser for solvent based printing inks and coating systems. |
| HLD-25 | Especially recommended for the production of water based transparent iron oxide dispersions. |
| HLD-27 | Anionic, hydrophobic dispersant which allows low millbase viscosities without impairing the water resistance of the final product. Also useable in combination with nonionic HLD's. |
| HLD-69 | Especially recommended for the production of pigment dispersions in the aqueous printing ink sector. This product meets a variety of food contact regulations. |
| | |

^{*} For detailed information please contact info@silcona.de

wb= water based; sb= solvent based; sl= solvent less; ♦♦ = excellent suitable; ♦ = suitable; ♦ = not suitable

| ionic character | wb/sb | solids | food contact | inorganic pigments and fillers | organic pigments | carbon black | SILCO SPERSE |
|--------------------|--------|--------|-----------------|-----------------------------------|---------------------|-----------------|-----------------|
| anionic | wb | 40% | - | ** | \Diamond | \Diamond | SDA-1 |
| anionic | wb | 30% | - | ** | \Diamond | \Diamond | SDA-2 |
| anionic | wb | 40% | - | ** | \Diamond | \Diamond | SDA-3 |
| anionic | wb | 50% | - | ** | \Diamond | \Diamond | HLD-5 |
| nonionic | wb | 90% | - | \Diamond | ** | ** | HLD-6 |
| anionic | wb | 80% | - | • | ** | \Diamond | HLD-8 |
| anionic | wb | 80% | - | ** | ** | \Diamond | HLD-8/R |
| nonionic | wb | 80% | ~ | \Diamond | ** | ** | HLD-9/A |
| nonionic | wb | 40% | ~ | \Diamond | ** | ** | HLD-11 |
| nonionic | wb | 51% | - | • | ** | ** | HLD-11/VS |
| nonionic | wb | 95% | ~ | • | ** | • | HLD-12 |
| anionic/nonionic | wb | 60% | - | ** | ** | ** | HLD-1211 |
| nonionic | wb/ sb | 99% | ~ | ♦ | ** | ** | HLD-16 |
| nonionic | wb | 75% | - | \Diamond | ** | ** | HLD-18/AJ |
| anionic | sb | 99% | - | ** | ** | • | HLD-19/N |
| anionic | wb | 30% | V | ** | • | \Diamond | HLD-25 |
| anionic | wb | 31% | V | ** | • | • | HLD-27 |
| anionic/nonionic | wb | 34% | V | ** | ** | ** | HLD-69 |

SILCO SPERSE HLD-1211

For water based Direct-to-Metal (DTM) coatings

Direct-to-Metal (DTM) coatings protect metal substrates from corrosion and serve a dual purpose as a topcoat. Compared to multilayer coatings they are cost and time saving and provide corrosion protection without the need of active pigments.

The move from solvent to water based DTM formulas has created a unique set of challenges for formulators. Every component of the formula contributes to the corrosion performance. Therefore the choice of the dispersing agent is crucial as well.

In order to meet the requirements for water based corrosion protection systems, the dispersing agent must have an excellent balance between hydrophilicity and hydrophobicity. The hydrophobic character prevents corrosive ions from migrating and the hydrophilic properties enables to stabilize inorganic pigments such as TiO₂. SILCO SPERSE HLD-1211 meets exactly these criteria!

SILCO SPERSE HLD-1211 is an anionic/nonionic wetting and dispersing additive and suitable for organic and inorganic pigments as well as carbon blacks in aqueous media. It gives outstanding results in dispersing properties and is compatible to nearly all water based binders.

SILCO SPERSE HLD-1211 is our new standard for industrial coating and our recommendation for anti-corrosion lacquers!

For more detailed information please contact info@silcona.de







HIGHLIGHTS +++

SILCO SPERSE HLD-69

For inkjet inks

SILCO SPERSE HLD-69 is a high performance dispersant especially suitable for water based, binder-free pigment concentrates for inkjet inks.

SILCO SPERSE HLD-69 has a broad compatibility range and is particularly suitable for special organic pigments and Carbon Blacks for inkjet inks such as P.Y. 74, P.Y. 155, P.R. 122, P.V. 19, P.B. 15:3 and P.Bk. 7 resulting in excellent colour strength development.

Based on its excellent wetting and dispersing power SILCO SPERSE HLD-69 provides outstanding stabilisation of the pigment concentrate. The low viscosity as well as the small particle size distribution is maintained after storage even at elevated temperatures. No sedimentation of pigment is observed.

SILCO SPERSE HLD-69 meets a high level of regulatory requirements and is compliant with essential food packaging regulations such as Swiss Ordinance – appendix 10 - list A, EU 10/2011 (PIM), BfR XIV and BfR XXXVI.







SILCO GLIDE SLIP ADDITIVES

- rub resistance
- slip
- anti blocking
- gloss

- soft feel
- flow/ levelling
- mar/ stain resistance

| SILCO GLIDE | special properties / main applications | wb/sb/UV |
|----------------|----------------------------------------------------------------------------------------------------------------------------------|----------|
| T-41 | Silicone based high performance slip and levelling additive for aqueous, solvent based and radically curing UV-coating systems. | wb/sb/UV |
| T-43 | Silicone based high performance slip and antiblocking additive for industrial coating systems. | wb/sb |
| T-45 | Silicone based high performance slip and antiblocking additive for solvent based coating systems. | sb |
| T-51 | Silicone based high performance slip additive for water based coating systems. | wb |
| T-52 | Microdispersion based on high molecular weight silicone. | wb |
| T-57 | Silicone based high performance slip and levelling additive for solvent based industrial coating systems and UV-coating systems. | sb/UV |
| T-520 | Microdispersion of high molecular weight silicone with excellent compatibility and easy processability. | wb |
| | | |

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wb= water based; sb= solvent based; sl= solvent less; 🔷 = excellent suitable; 🔷 = suitable; 🔾 = not suitable; UV= radically curing UV systems

+++ NEWS +++ HIGHLIGHTS +++ SPECIAL APPLICATION +++ NEWS +++

SILCO GLIDE T-52 Glide additive

SILCO GLIDE T-52 is an ultra-high molecular weight silicone dispersion to improve slip, rub resistance, abrasion resistance and anti blocking in aqueous coating systems.

General application

- paints and lacquers
- OPV's
- inks
- leather

Technical information

- appearance opaque to white liquid
- active ingredient silicone gum
- solids 65 %
- solvent water
- ionic character nonionic

Properties

SILCO GLIDE T-52 improves

- ◆ slip
- rub resistance
- mar/scratch resistance
- anti blocking
- soft feel

| solids | printing inks / OPV's | industrial coatings | wood and furniture coatings | plastic substrate | food contact* | SILCO GLIDE |
|--------|--------------------------|------------------------|--------------------------------|----------------------|------------------|----------------|
| >98% | ** | * | ** | • | V | T-41 |
| >98% | \Diamond | ** | ** | ** | V | T-43 |
| 100% | \Diamond | ** | ** | ** | V | T-45 |
| 70% | ** | ** | ** | • | _ | T-51 |
| 65% | ** | ** | ** | ** | - | T-52 |
| >98% | ** | ** | ** | ** | V | T-57 |
| 60% | ** | ** | ** | ** | - | T-520 |

HIGHLIGHTS

+++

SPECIAL

APPLICATION

+++

Application Examples



in leather

High quality leather coatings contain up to 2-10% silicone dispersion. Improved softness and wear resistance as well as good slip characteristics are the main features of silicone dispersion in leather finishes.



in joinery

Coatings for joinery contain 0.3-2.0% silicone dispersion. Imparts anti blocking, slip, scratch and mar resistance.



in an OPV

OPV's contain 0.1-1% silicone dispersion. The addition improves antiblocking, scratch resistance, higher gloss and slip values.

SILCO AF ANTIFOAM ADDITIVES

broad compatibility

defoaming

process optimisingsmooth surface

| SILCO AF | special properties / main applications | wb/sb/sl | type |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------------|
| 700 | Especially recommended for an effective defoaming of high build systems e.g. 2K epoxy flooring. | wb/sb/sl | silicone |
| 822 | Silicone-free additive for an effective defoaming of printing inks and adhesives. | wb | polymer |
| 831 | Silicone-free and mineral oil-free additive for an effective defoaming of water based pigment grindings. | wb | polymer |
| 832 | Silicone-free and mineral oil-free additive for an effective defoaming of water based pigment grindings. Based on renewable resources. | wb | vegetable oil |
| 833 | Additive for an effective defoaming of water based paints and printing inks. | wb/sb | mineral oil |
| 837 | Especially recommended for an effective defoaming of water based paints. | wb | mineral oil emulsion |
| 838 | Especially recommended for an effective defoaming of architectural coatings and paints. | wb | mineral oil emulsion |
| 843 | Especially recommended for an effective defoaming of water based coating systems, highly compatible. | wb | silicone emulsion |
| 844 | This defoamer combines high activity with excellent compatibility and is applied in coating systems for brushing, rolling and spraying. | wb | silicone emulsion |
| 866 | Especially recommended for an effective defoaming of OPV's and aqueous coating systems. | wb | silicone emulsion |
| 870 | Additive for an effective defoaming of UV screen printing ink. | sb | silicone |
| 883 | Additive for an effective defoaming of aqueous pigment preparations. | wb | silicone |
| 886 | Especially recommended for an effective defoaming of water based coating systems. | wb | silicone |
| 889 | Especially recommended for an effective defoaming of OPV's and water based coating systems. | wb | silicone |
| 892 | Especially recommended for an effective defoaming of OPV's and water based coating systems, highly compatible. | wb | silicone |
| 1010 | Effective defoamer concentrate based on polyether siloxane technology. Provides good long-term effectiveness and additional deaeration effect; highest compliancies. | wb | silicone |
| 1020 | More compatible version of AF 1010; highest compliancies. | wb | silicone |
| | | | |

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wb= water based; sb= solvent based; sl= solvent less; ♦♦ = excellent suitable; ♦= suitable; ♦= not suitable

| solids | printing inks/OPV's | industrial coatings | wood and furniture coatings | architectural coatings | pigment concentrates | food contact* | silicone free | SILCO AF |
|--------|------------------------|------------------------|-----------------------------|---------------------------|-------------------------|------------------|------------------|-------------|
| >95% | \Diamond | \Diamond | \Diamond | ** | \Diamond | V | - | 700 |
| >99% | ** | • | \Diamond | • | \Diamond | V | V | 822 |
| >99% | ** | • | • | ** | ** | ✓ | V | 831 |
| >99% | ** | • | • | ** | • | ✓ | ✓ | 832 |
| >99% | ** | • | • | ** | • | - | ✓ | 833 |
| 55% | ** | • | \Diamond | ** | \Diamond | - | ✓ | 837 |
| 30% | • | • | \Diamond | ** | \Diamond | - | - | 838 |
| 26% | ** | ** | ** | • | • | v | - | 843 |
| 26% | ** | ** | ** | • | ** | ✓ | - | 844 |
| 26% | ** | ** | \Diamond | \Diamond | \Diamond | v | - | 866 |
| >99% | ** | \Diamond | \Diamond | \Diamond | \Diamond | ✓ | - | 870 |
| >99% | \Diamond | • | • | • | ** | ✓ | - | 883 |
| >99% | \Diamond | ** | ** | • | \Diamond | v | - | 886 |
| 40% | ** | • | ** | \Diamond | \Diamond | ✓ | - | 889 |
| >99% | • | • | ** | \Diamond | \Diamond | ✓ | - | 892 |
| >99% | • | ** | • | • | ** | ✓ | - | 1010 |
| >99% | ** | • | ** | ** | • | V | _ | 1020 |

SILCO FLW FLOW & LEVELLING

anticissing

colour strength

compatibilizer

| SILCO FLW | special properties | wb/sb | solids |
|--------------|-------------------------------------------------------------------------------------------|-------|--------|
| K-134 | Standard levelling additive for water based coating systems. | wb | 52% |
| L-137 | Unique wetting and levelling additive for the substitution of fluorinated wetting agents. | wb | 50% |

SILCO WET WETTING ADDITIVES

| SILCO WET | special properties | wb/sb | solids |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------|
| 065 | Super compatibiliser for water based colorants. | wb | 64% |
| 076 | Super compatibiliser for water based colorants. | wb | 75% |
| 092 | Super compatibiliser for water based colorants. | wb | >98% |
| C-600 | Wetting additive for co-solvent/VOC-free water based coating systems. | wb | >98% |
| C-602 | Wetting additive to reduce surface tension and to increase surface smoothness of water based and solvent based coating systems. | sb | >98% |
| C-607 | Wetting additive to reduce surface tension significant and to increase surface smoothness of solvent based coating systems. | sb | >98% |
| C-609 | Excellent wetting properties for water based coating systems. | wb | 95% |
| C-650 | Excellent wetting properties for solvent based coating systems. | sb | >98% |
| D-500 | Low foaming VOC- and silicone-free wetting additive. | wb | >98% |
| D-504/PEG | Improves flow and wetting properties and has additionally anti-foaming effects. | wb | >98% |
| D-505 | VOC-free, silicone-free wetting additive. Fullfills highest compliancies with respect to food contact requirements. | wb | 85% |
| D-522 | VOC-free, silicone-free wetting additives with anti-cissing properties. | wb | 85% |
| D-550 | Non-foaming VOC-free, silicone-free and alkindiol-free wetting additive. Developed for highest compliancies with respect to food contact requirements. | wb | >98% |

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| printing inks / OPV | industrial coatings | wood and furniture coatings | architectural coatings | plastic substrate | food contact* | silicone free | SILCO FLW |
|------------------------|------------------------|--------------------------------|---------------------------|----------------------|------------------|------------------|--------------|
| \Diamond | ** | ** | • | ** | V | - | K-134 |
| \Diamond | ** | ** | * | * | ~ | - | L-137 |

| printing inks/ OPV | industrial coatings | wood and furniture coatings | architectural coatings | plastic substrate | food contact* | silicone free | SILCO WET |
|-----------------------|------------------------|-----------------------------|---------------------------|----------------------|------------------|------------------|--------------|
| • | • | • | ** | ** | V | V | 065 |
| • | • | * | ** | ** | - | V | 076 |
| * | • | * | ** | ** | V | V | 092 |
| • | ** | ** | * | ** | V | - | C-600 |
| n. a. | ** | ** | \Diamond | \Diamond | V | - | C-602 |
| \Diamond | ** | ** | • | ** | V | - | C-607 |
| n. a. | • | ** | ** | * | V | - | C-609 |
| n. a. | ** | * | ** | \Diamond | - | - | C-650 |
| ** | • | \Diamond | * | \Diamond | V | V | D-500 |
| ** | ** | ** | ** | * | V | V | D-504/PEG |
| ** | • | \Diamond | \Diamond | \Diamond | V | V | D-505 |
| \Diamond | • | ** | • | \Diamond | V | V | D-522 |
| ** | \Diamond | \Diamond | \Diamond | \Diamond | V | V | D-550 |
| | | | | | | | |

SILCO OZ OPEN TIME EXTENDERS

- better workability
- improves the open time and the wet edge of the paint

| SILCO OZ | special properties | wb/sb | solids |
|-------------|--------------------------------------------------------------------------|-------|--------|
| 100 | APEO- and VOC-free additives to extend open time in paints and lacquers. | wb | 75% |
| 200 | APEO- and VOC-free additives to extend open time in paints and lacquers. | wb | 50% |

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SILCO PHOBE HYDROPHOBING ADDITIVES

- water proofing
- dirt pick up resistance
- water repellency

| SILCO PHOBE | special properties | wb/sb | solids |
|----------------|--------------------------------------------------------------------------------------------------|-------|--------|
| H-1022 | Cationic emulsion with excellent water repellence of wood, concrete, gypsum and silicate paints. | wb | 30% |

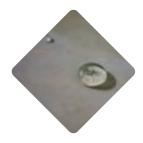
| printing inks/ OPV | industrial coatings | wood and furniture coatings | architectural coatings | plastic substrate | SILCO OZ | | |
|-----------------------|------------------------|--------------------------------|---------------------------|----------------------|-------------|--|--|
| \Diamond | • | * | ** | \Diamond | 100 | | |
| | | | | | | | |



SILCO OZ 100 / OZ 200 Open time extender

Todays paint market is pushing for low-/non emission paints. Solvents are no longer formulated. By that reason the time frame to rework painted areas is shortened and needs to be extended. SILCO OZ grades retards water within the film without negative influence on final properties e.g. dirt pick up, stain resistance.

| printing inks/ | industrial | wood and furniture | architectural | plastic | SILCO |
|----------------|------------|--------------------|---------------|-----------|--------|
| OPV | coatings | coatings | coatings | substrate | PHOBE |
| | \Diamond | | ** | | H-1022 |



SILCO PHOBE H-1022 Hydrophobing additive

SILCO PHOBE H-1022 is an aqueous cationic emulsion of modified polydimethylsiloxane used as hydrophobing additive for construction materials.





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