Ink Vehicles and Additives

Conventional Sheetfed Ink Vehicles

KB-1016 EU	Maximum Adhesion, Structured Sheetfed Vehicle for Plastic Substrates
KB-1098 EU	Sheetfed Gloss Varnish
KB-1104 EU	General Purpose, Structured Sheetfed Vehicle
KB-290 EU	Mineral Oil Free, Structured Sheetfed Vehicle
KB-406 EU	Premium Pigment Dispersion Vehicle for Plastic Substrates
KB-480 EU	General Purpose Pigment Dispersion Vehicle

Conventional Sheetfed Ink Additives

KB-103 EU	#3 Body Linseed Alkyd for Pigment Wetting
KB-173 EU	Structured Linseed Alkyd
KB-112 EU	Soya based alkyd with good pigment wetting
KB-724 EU	Anti Oxidant
KB-767 EU	Ink Bodying Additive
KB-791 EU	Water Pick-Up Reducer

Conventional Sheetfed Overprint Bases

KB-3170 EU	General Purpose Sheetfed Overprint Base
KB-8700 EU	Food Compliant Sheetfed Overprint Base

Heatset Web Offset Overprints

KB-3731 EU	Gluable, UV Coatable, Heatset Overprint

Wax Compounds

KBW-TF100	Linseed Based Polyethylene Compound for Inks for Plastic
KBW-TF100S	Polyethylene Wax Compound for Compliant Sheetfed Inks
KBW-TF75S	Polyethylene Wax Compound for Compliant Sheetfed Inks

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KB-1016 EU

Maximum Adhesion Sheetfed Gel Vehicle

Description

KB-1016 EU is formulated to give the unique combination of excellent adhesion and oxidative dry with surprisingly fast set speed. KB-1016EU is formulated with the hottest oxidative vegetable oils and a high-end resin system.

Performance Characteristics

- Excellent adhesion to all types of plastic, foilboard and metal tin plate.
- Faster set speed then most high solids systems for plastic.
- Excellent water balance and litho performance.
- Positive oxidative drying

Safety Datasheet

Available on request

Specifications		Values	Method of analysis
Tack		300-350	30°C - 100 m/min
Viscosity	dPa.s	1000-1500	40°C – C&P 10s-1
Non-Volatile	%	98-100	

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KB-1098 EU
Gloss Varnish

Description

KB-1098 EU is a sheetfed gloss varnish designed for use in the highest quality offset ink systems and 3 piece metal deco inks. The KB-1098 EU gloss varnish is based on phenolic modified rosin resins and vegetable oils. The set speed of this product is exceptional for vehicles of this type, and drying can be controlled by varying the amounts and types of ink driers. KB-1098 EU is compatible with a wide variety of commonly used vehicles and modifiers, including soya systems. KB-1098 EU improves transfer due to higher tack and has a high water repellency in 3 piece metal deco inks.

Performance Characteristics

- Mineral Oil Free and Swiss Ordinance compliant
- Excellent Film and Resistance Properties
- Excellent Water Fighting with High Viscosity
- Improves transfer due to high tack
- High Gloss

Safety Datasheet

Available on request

Specifications		Values	Method of analysis
Tack		400-500	30°C - 100 m/min
Viscosity	dPa.s	3000 – 5000	23°C – C&P (Eurocommit)
Non-Volatile	%	98-100	
Tan Delta		3,0-5,0	25°C

Notice:
The presented information is accurate to be the best of our knowledge, but without any guarantee. Users should satisfy themselves on the suitability of this product for their purposes. If necessary, they can consult our technical service staff.
This issue supersedes and cancels all previous issues concerning this product.

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KB-1104 EU

General purpose sheetfed Letback Vehicle

Description

KB-1104 EU is a general purpose, high vegetable oil containing letback vehicle. This product is formulated to be low in VOC's and contains structured resin to allow for good litho properties on press. KB-1104 EU when used in conjunction with KB-480 EU, General Purpose Sheetfed Pigment Dispersion Vehicle, promotes high performance on press still having a cost-efficient ink system for paper and paperboard.

Performance Characteristics

- Good Litho properties
- High Solids
- Low VOC content
- Economical

Safety Datasheet

Available on request

Specifications		Values	Method of analysis
Tack		300-400	30°C - 100 m/min
Viscosity	dPa.s	1000-1400	40°C – C&P 10s-1
Tan Delta		2,0-3,5	25°C

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KB-290 EU

High Solids Soya Gel Vehicle

Description

KB-290 EU is a high solids vegetable oil and phenolic blend resin system. The high viscosity and gel structure impart low dot gain and high hold out properties.
KB-290 EU is formulated with 70-80% sustainable raw materials.

Performance Characteristics

- Very High Solids
- High Viscosity and Gel Structure
- Low Dot Gain and High Hold Out

Safety Datasheet

Available on request

Specifications		Values	Method of analysis
Tack		250-350	30°C - 100 m/min
Viscosity	dPa.s	1500-2500	40°C – C&P 10s-1
Tan Delta		2,2-2,8	25°C

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KB-406 EU

Mineral Oil Free Fast Setting Sheetfed Grinding Vehicle

Description

KB-406 EU is a high solids hard drying grinding vehicle with excellent pigment wetting and maximum pigment dispersion. It is an excellent choice for all paper, paperboard and nonporous substrates to promote positive dry and adhesion. KB-406 EU promotes high holdout, with excellent gloss and transfer properties.

Performance Characteristics

- Mineral Oil Free and Swiss Ordinance compliant
- Excellent pigment wetting
- High oxidative potential
- Excellent water balance and litho performance.
- Excellent gloss

Safety Datasheet

Available on request

Specifications		Values	Method of analysis
Tack		325-425	30°C - 100 m/min
Viscosity	dPa.s	350-550	25°C – C&P 10s-1

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KB-480 EU

General Purpose Sheetfed Pigment Dispersion Vehicle

Description

KB-480 EU is a general purpose sheetfed dispersion vehicle with good wetting and litho performance. It's formulated to be higher solids and its resin system allows for good dispersion properties. KB-480 EU when used in conjunction with KB-1104 EU, general purpose let back vehicle, promotes high performance on press, while maintaining a cost-efficient ink system for paper and paperboard.

Performance Characteristics

- Excellent pigment wetting properties
- Good oxidative potential
- Excellent water balance and litho performance
- Excellent gloss
- Economical Vehicle

Safety Datasheet

Available on request

Specifications		Values	Method of analysis
Tack		150 – 250	30°C - 100 m/min
Viscosity	dPa.s	300 – 500	25°C – C&P 10s-1
Non-Volatile	%	84 – 86	

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KB-103 EU
Linseed Alkyd

Description

KB-103 EU is an isophthalic linear structured alkyd with exceptional pigment wetting capacity

Performance Characteristics

- Imparts excellent gloss and flexibility to an ink film
- Improves pigment wetting and strength development in flush and dry grind process
- Excellent oxidative dry which makes it a good choice for inks for paper and select plastic substrates

Safety Datasheet

Available on request

Specifications		Values	Method of analysis
Viscosity	dPa.s	55-65	25°C–C&P 10s-1
Acid Number	mg KOH/g	Max. 10	Automatic titration
Non-Volatile	%	Min. 99	0.5g/0.5h/150°C
Color	Gardner	Max. 10	Spectrophotometric

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KB-173 EU

Low Tack High Structure Alkyd

Description

KB-173 EU is a solvent and mineral oil free alkyd blend with a low tack and a structured body. The combination of low tack and physical structure allows it to be used without adding to misting or dot gain. KB-173 EU is exceptional as a pigment wetter for reducing gloss back and bronze especially in carbon black and lithol rubine.

Performance Characteristics

- Excellent pigment wetting of carbon black and lithol rubine
- Positive oxidative dry properties
- Reduces bronze
- Imparts excellent gloss and dries to good hard film
- Low tack and structured body allows for use without increasing misting.
- Mineral oil free and Swiss Ordinance compliant

Safety Datasheet

Available on request

Specifications		Values	Method of analysis
Tack		340-440	30°C - 100 m/min
Viscosity	dPa.s	900-1400	25°C – C&P 10s-1

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KB-112 EU
Soya Alkyd

Description

KB-112 EU is a soya based alkyd with good pigment wetting, relatively low polarity and good compatibility with printing ink distillates and hard resins. KB-112 EU has low odor and is a good choice for use in food and cosmetic packaging inks.
It is used both in grinding / wetting vehicles as well as for formulating sheetfed, coldset and heatset ink vehicles.

Performance Characteristics

. Imparts excellent gloss and flexibility to an ink film
• Improves pigment wetting and strength development in flush and dry grind process
• Low odor

Safety Datasheet

Available on request

Specifications		Values	Method of analysis
Viscosity	dPa.s	350-450	23°C–C&P 50s-1
Acid Number	mg KOH/g	Max. 10	Automatic titration
Color	Gardner	Max. 8	Spectrophotometric
Non-Volatile	%	Min. 99	0.5g/0.5h/150°C

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KB-724 EU

BHT - Anti-Oxidant Solution

Description

KB-724 EU is a liquid BHT solution cut in soya bean oil. KB-724EU can be used to prevent oxidative skin in the container or ink duct. In the thin ink film, however, KB-724EU will not affect the ink driers from performing their function of accelerating oxidation and allowing the ink film to completely through dry.

Performance Characteristics

- Stay Open on the Rollers Overnight (or Longer)
- Little Effect on the thin Film Drying Properties
- Compatible with all Oil Based Products

Usage Recommendation

0.1 – 1.0%

Safety Datasheet

Available on request

Specifications	Values
Appearance	Yellowish/Light Brown Liquid
Non-Volatile	98 – 100%
Specific Gravity	1.10

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KB-767 EU
Body Builder

Description

KB-767 EU was developed as a replacement to dry clay additives in all conventional inks including sheetfed, waterless, and heatset. Suggested usage is 0.5 - 2.0%.

Performance Characteristics

- Control Misting
- Tighten Body
- Easily milled into inks or added via high speed disperser
- Can be used to convert conventional inks into waterless inks
- No phase separation

Safety Datasheet

Available on request

Specifications		Values	Method of analysis
Viscosity	dPa.s	50-150	25°C – C&P 10s-1
Appearance		Brownish liquid	

KB-767EU Heatset and Sheetfed Reactivity and Stability Study

Typical sheetfed offset ink was chosen for this study.

Initial ink specs
Tack @ 1200 rpms/1min : 14.2
Laray Viscosity: 385
Laray Yield Value: 3,936

KB-767 EU was added to this ink at 2 and 4% level.
The following changes in body were observed:

Dates	Visc. (2%)	Yield (2%)	Visc. (4%) *	Yield (4%)
Within 10 minutes of addition**	530	15,847	623	29,127
24 Hours Later	553	15,293	632	33,295
1 Week Later	551	14,852	592	31,578
1 Month Later	559	15,947	651	37,319

* 4 % of KB-767 is obviously too much to make a good ink in the above system, but this information was included to show the power of KB-767 EU.

Typical web heatset offset ink was chosen for this study.

Initial ink specs:
Tack @ 1200 rpms/1min.: 10.4
Laray Viscosity: 237
Laray Yield Value: 1,351

KB-767 EU was added to the above inks at 2% and 4% level.
The following changes in body were observed over time:

Dates	Visc.(2%)	Yield (2%)	Visc. (4%)	Yield (4%)
Within 10 minutes of addition**	263	2,246	263	3,254
48 Hours Later	271	2,350	263	4,375
1 Week Later	291	2,563	285	6,120
1 Month Later	291	3,331	307	6,346
6 Weeks Later	357	3,520	353	5,361

** In both sheetfed and heatset inks there was no significant change in initial tack after the addition of the KB-767 EU and after 10 minutes. Initial tacks were not checked on subsequent days but are not expected to have changed much.

For details on the ink formulary, please contact your Umicore sales representative.

February 2019

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KB-791 EU

Ultimate Water Fighting Additive

Description

KB-791 EU is very efficient in reducing water pickup when measured by Duke ink-water emulsification tester. At the suggested usage of 1-2% in an ink, you can expect a typical reduction of *20-35%.

* These results are typical and may be affected by extremely low ink rheology or the addition of other additives to your ink.

Performance Characteristics

- Reduces Water / Fountain Solution pickup
- Mineral Oil Free

Safety Datasheet

Available on request

Specifications		Values	Method of analysis
Viscosity	dPa.s	40-80	25°C
Appearance		Clear yellow-Amber Colored	

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KB-3170 EU

Wax Free Drier Free Low Odor SF OPV Base

Description

KB-3170 EU is formulated specifically for low odor and low yellowing applications using the lowest odor* and lowest yellowing raw materials available. KB-3170 EU's properties include high gloss, wax free, drier free and low yellowing to allow for maximum formulation flexibility. Example formulation : see backside.

*Low odor is a subjective property. Always pre-test for low odor using customers method and conditions prior to printing.

Performance Characteristics

- Formulated with low odor raw materials
- High gloss
- Drier free
- Wax free

Safety Datasheet

Available on request

Specifications		Values	Method of analysis
Tack		300-400	30°C - 300 m/min
Viscosity	dPa.s	350-450	25°C – C&P 10s-1

Gloss Sheetfed Litho OPV Formulation

February 2019

Add three raw materials below:

KB-3170EU	88.0 %	Umicore
Soybean Oil	5.0 %	
KBW-TF100S	3.5 %	Umicore

Mix & heat above items to 25°c, then add the following:

ECOS ND 15	1.5 %	Umicore
Valirex Mn 8% Neo Ester	2.0 %	Umicore

Continue mixing @ 25° C for 15 minutes, then sample to QC.

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KB-8700 EU
Indirect Food Contact SF OPV Base

Description

KB-8700 EU is a low yellowing overprint base allowing for the development of a finished OPV that is FDA indirect food compliant and Nestle compliant. For a recommendation on making a compliant finished, gloss OPV, please see the back of this TDS. Applications include general purpose, folding carton and labels.

Performance Characteristics

- FDA compliant for Indirect Food Contact under 21 CFR 175.300*
- Nestle compliant
- Low yellowing
- Fast oxidative dry potential

Safety Datasheet

Available on request

* The non-volatile components of this product are individually listed by and are in compliance with the Food & Drug Administration (FDA) under 21 CFR 175.300 Resinous and Polymeric Coatings when used in accordance with any specifications and limitations therein.

Specifications		Values	Method of analysis
Tack		300-400	30°C - 300 m/min
Viscosity	dPa.s	400-550	25°C – C&P 10s-1
Non-Volatile	%	98-100	

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KB-3731 EU

Low Odor Wax Free Gloss Heatset OPV

Description

KB-3731 EU is a very fast drying, low odor heatset overprint without wax to allow for finishing applications. KB-3731 EU contains only high melt point resin that will outperform typical overprints for misting, press stability and maintain viscosity under high heat and shear.

Performance Characteristics

- Low Odor*
- Fast setting
- Accepts foil stamping, gluing, and coating*
- Low yellowing

*Always test in the lab before proceeding to press.

Safety Datasheet

Available on request

Specifications		Values	Method of analysis
Tack		160-220	30°C - 150 m/min
Viscosity	dPa.s	120-180	25°C – C&P 10s-1

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KBW-TF100
Polyethylene S.F. Compound

Description

KBW-TF100 is formulated to provide consistent wax particle size and outstanding efficiency in rub resistance in a highly oxidative system. KBW-TF100 is effective on non-porous substrates and in low VOC formulations.

Performance Characteristics

- Excellent oxidative dry potential
- Excellent rub resistance
- Good gloss retention
- Overprintable and foil stampable

Usage Recommendation

3 – 6%

Safety Datasheet

Available on request

Physical Properties	
Non-Volatile	96 – 100%
Vehicle Type	Vegetable Oil
Polymer Type	Polyethylene

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KBW-TF100S
VOC-free Polyethylene S.F. Compound

Description

KBW-TF100S is a soya based poly compound formulated to provide consistent wax particle size and outstanding efficiency in rub resistance. KBW-TF100S is low odor and effective in inks for paper and paperboard and select nonporous substrates and in low VOC formulations.

Performance Characteristics

- Recommended for food packaging
- Low Odor
- Mineral Oil Free
- Soya Based
- Excellent rub resistance
- Good gloss retention
- Overprintable and foil stampable

Usage Recommendation

3 – 6 %

Safety Datasheet

Available on request

Physical Properties	
Non-Volatile	98 – 100%
Vehicle Type	Vegetable Oil
Polymer Type	Polyethylene

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KBW-TF75S
VOC-free Polyethylene S.F. Compound

Description

KBW-TF75S is a VOC free, vegetable oil based poly compound formulated to provide consistent wax particle size and outstanding efficiency in rub resistance. KBW-TF75S is low odor and effective on paper, paperboard and some non-porous substrates.

Performance Characteristics

- Excellent for sheetfed and heatset applications
- 100% non-volatile
- Vegetable Oil Based
- Excellent rub resistance
- Good gloss retention
- Overprintable and foil stampable

Usage Recommendation

4 - 7%

Safety Datasheet

Available on request

Physical Properties	
Non-Volatile	98 – 100%
Vehicle Type	Vegetable Oil
Polymer Type	Polyethylene
Average Particle Size	2.5 µm