PRESENTATION

SINTOCHEM is an Italian company that, since 1985, has been dedicated to the production and marketing of specialty resins suitable for formulating inks for the flexible packaging industry. **SINTOCHEM 's primary mission** is to create products tailored to the needs of both the food packaging ink market and specific customer requirements, formulating tailor-made solutions.

Today, **SINTOCHEM** sells its resins worldwide. It is the Italian market *leader* in the polyurethane ink sector and offers a complete range of resins with a very broad spectrum of properties and possible applications.
These results have been achieved thanks to the high quality standards maintained and the continuous commitment to research and development of new products.

SINTOPOL® are non-reactive and flexible **resins** , suitable for the formulation of inks for modern printing techniques, flexography and rotogravure, and can be used on various printing substrates.

SINTOPOL® products are also characterised by good solubility and solvent release speed, excellent cohesion and effective adhesion on multiple plastic substrates.

BRIEF NOTES ON THE WORLD OF INKS

The birth of the global market has forced the printing ink industry to move away from the old concept of local or national territoriality and adapt to the new demands of internationalization.

Over the past few decades, there has been considerable development in the field of liquid inks, especially in the flexible packaging industry.
SINTOCHEM has chosen to focus its business precisely on this sector, paying particular attention to following the rapid developments in printing technologies and the consequent changes in the market and customer needs.

Thanks to a significant growth trend, the European ink market has reached quantities exceeding 1 million tons in recent years with a turnover exceeding 4 billion euros, even though ink manufacturers in Europe are currently not as numerous as in the paint sector.

Until the late 1960s, inks based on polyamide resins were formulated to ensure good adhesion on polyolefin substrates. These presented several problems, including residual odor, poor heat resistance, and a tendency toward thixotropy, which could usually be avoided by adding small amounts of aromatic solvents (usually toluene).

In the early 1970s, a major American company patented and produced several flexographic inks based on polyurethane-modified nitrocellulose. Excellent ink adhesion to polyolefin substrates was ensured by adding a small amount of adhesion promoter at the time of use.
Even today this technology is the basis for the preparation of inks for food packaging.

SINTOPOL® are polyurethane resins at the basis of this technology, revised and renewed over the years to adapt to market needs.

SINTOPOL ®

SINTOPOL® non-reactive polyurethane resins are characterised by excellent compatibility with nitrocellulose, excellent cohesion, effective adhesion, good solubility, low odour and fast solvent release.

Suitable for both internal and external printing, in most cases **SINTOPOL®** are also available in versions with 100% solid content, i.e. free from volatile solvents.

The **SINTOPOL®** range includes resins capable of forming films with variable hardness and viscosity to meet different printing needs.

Considering only pure aromatic **SINTOPOL®,** the sequence, starting from the softest and most flexible to the hardest, is:

PLASTIC FILM

SINTOPOL® SP 75 LV

SINTOPOL® SP 75

SINTOPOL® MD 95

SINTOPOL® MD 100

SINTOPOL® MD 110

SINTOPOL® MD 120

HARD MOVIE

Generally, softer ones are better plasticizers, while harder ones are less flexible but have superior adhesion properties.

SOLUBILITY

The **solubility** of **SINTOPOL®** is good in all moderately polar solvents: ketones, esters, ethers, alcohols.
Always considering only pure **SINTOPOL®** aromatics, the solubility in alcohol increases according to the sequence:

Solubility in ethanol:

SP 75LV > SP75 > MD95 > MD 100 > MD 110 > MD 120

Inks obtained with **SINTOPOL® resins** have very rapid drying times (they are suitable for printing speeds even greater than 300 m/min), high resistance to heat sealing and good adhesion on a notable variety of plastic films.

The heat-sealing resistance of nitrocellulose inks modified with **SINTOPOL®** and titanium dioxide can reach 120-130°C for approximately 1-2 seconds. Using a suitable cross-linking catalyst (titanium chelate), heat resistance increases to 180°C after 24-48 hours. Increased heat resistance can also be achieved by introducing a higher percentage of nitrocellulose into the formulation, where possible.

SINTOCHEM also produces **hydroxylated** polymers for glossy and scratch-resistant outdoor printing inks and varnishes.

SINTOPOL® **E 222/100%** (Saturated Polyester Resin) is currently used in the formulation of two-component (2K) inks usually cross-linked with isocyanate adducts.

SINTOPOL® are designed for use in various applications and can be divided into different types:

- **SINTOPOL® pure aromatics** for both flexography and rotogravure.
- **SINTOPOL® semi-aliphatic** for the formulation of inks typically intended for pasteurization-resistant packaging.

- **SINTOPOL® pure aliphatic**, which are the top of the range for the most extreme applications with thermal, chemical and mechanical resistance requirements, typically for packaging that can also be sterilized. Sintochem has invested considerable research in this family of products to create products that are also suitable for reducing the use of nitrocellulose in ink formulations.

Storage times and methods:

- **SINTOPOL®** products are stable for one to two years, depending on the type, if stored properly in a cool, dry place and in their original packaging.

All **SINTOPOL®** :

- According to FDA regulations are made with permitted substances for use as components of articles in food packaging (#21- CFR 175.105 ; #21- CFR 175.300).
- Are produced without Tin catalysts and don't contain any Tin organic compound.
- Are produced in compliance with Community Directive 2002-72-CE and subsequent revisions.
- Comply with REACH and Swiss and international regulations.

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SINTOCHEM

CERTIFIED QUALITY MANAGEMENT SYSTEM
CQY CERTIQUALITY
UNI EN ISO 9001:2015

CERTIQUALITY IS MEMBER OF CISQ FEDERATION

SINTOPOL®

Resins for printing inks

1. Polyurethane Resins, Not Reactive for combination with Nitrocelluloses and Ketone Resins :

PRODUCT NAME	SOLIDS	SOLVENT	FILM-HARDNESS	USE and TIPICAL CHARACTERISTICS
SINTOPOL® DP 50/100%	100%	----------	Very soft	For production of predisperded and as substitute of monomeric plastifier in Nitro-Urethane systems.
SINTOPOL® SP 75/100%	100%	----------	Very soft	For production of flexo- and rotogravure inks for foodstuff-packaging. Improvement of gloss, blocking-resistance, heatsealresistance, adhesion on PE and on PP.
SINTOPOL® SP 75/80%EA	80%	Ethylacetate	Very soft	As above.
SINTOPOL® SP 75LV/100%	100%	----------	Very soft	As above.
SINTOPOL® SP 75LV/80%EA	80%	Ethylacetate	Very soft	As above.
SINTOPOL® DP 90/100%	100%	----------	Soft	For production of flexo and rotogravure inks. In combination with Nitrocellulose confer good adhesion on PE and on PP.
SINTOPOL® DP 102/75%EA	75%	Ethylacetate	Soft	As above.
SINTOPOL® MD 95/100%	100%	----------	Soft	For use as above, but with higher filmhardness. Excellent adhesion on treated polyolefines.Low odour.
SINTOPOL® MD 95/75%EA	75%	Ethylacetate	Soft	As above.
SINTOPOL® MD 100/100%	100%	----------	Soft	As above.
SINTOPOL® MD 100/80%EA	80%	Ethylacetate	Soft	As above.
SINTOPOL® MD 110/75%EA	75%	Ethylacetate	Hard	Special type for rotogravure and flexographic inks. Improved heatresistance. Other characteristics as above.
SINTOPOL® MD 120/60%EA	60%	Ethylacetate	Very hard	Intended for formulation of gravure inks with good adhesion on a wide range of packaging substrates. Other characteristics as above.
SINTOPOL® DP 160-C/45%EA	45%	Ethylacetate	Hard	Special semi-aliphatic PU for flexo and rotogravure inks. Intended for formulation of inks for pasteurization with good adhesion on PET and PA.
SINTOPOL® AD 164SH/45%EA	45%	Ethylacetate	Very hard	Special aliphatic polyester-polyether for flexo and rotogravure inks. Intended for formulation of inks for pasteurization and sterilization with very good adhesion on PE, PET, PP, OPA, Saranized or metalized films, paper and Aluminium. Good solvent release and excellent cohesion in laminations.
SINTOPOL® DP 166/42%EA	42%	Ethylacetate	Hard	As above with good solubility in Alcohol and good pigment wetting property.
SINTOPOL® DP 266/42%EA	42%	Ethylacetate	Very hard	Special aliphatic PU for flexo and rotogravure inks. Intended for formulation of inks for pasteurization and sterilization with very good adhesion on PE, PET, PP, OPA, Saranized or metalized films, paper and Aluminium. Due to its aliphatic nature, it has a very good resistance to UV. Good solvent release and excellent cohesion in laminations. Non-yellowing under effect of UV rays and the good resistance to saponification.
SINTOPOL® DP 180/30%EA	30%	Ethylacetate	Hard	As above with very High Molecular Weight and better lamination bond strength. Apt for mono-solvent systems. Modifier apt to viscosity increasing in system inks.

2. OH-reactive Resins :

SINTOPOL® E222/100%	100%	----------	----------	Partially tri-functional saturated polyester resin for formulation of two-components rotogravure inks. Good gloss and good hiding power.

INFORMATIVE BULLETIN

SINTOPOL® DP 50/100%

Description

SINTOPOL® DP 50/100% is a aromatic polyurethane, not reactive, apt as unmigrating polymeric plastifier for inks.

Typical characteriftics

- Solid content	: 100%
- Viscosity (Brookfield 25°C)	: 2500 ± 1000 m.Pa.s.
- Colour Gardner	: < 2
- Density	: 1 ± 0,03 Kg/lt
- Flashpoint	: >65°C

Applications

SINTOPOL® DP 50/100% is soluble in esthers, ketones alcohols and aromatic solvents, it has compatibility with the primary plastifier of DOP, DBP, citrates, etc., nitrocellulose, maleic resins, cellulose ethers, polyesthers and alkyd resins.

Storage

SINTOPOL® DP 50/100% is stable for at least 2 years if conserved in a cool and dry place and in the original sealed packaging.

Packaging

200 kgs net, in iron steel drums

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INFORMATIVE BULLETIN

SINTOPOL® DP 90/100%

Description

SINTOPOL® DP 90/100% is a thermoplastic urethane resin, not reactive, with good plastifying properties.

Typical characteristics

- Solid content	: 99 ÷ 100%
- Viscosity	: thick liquid at room's temperature
- Viscosity diluted 75% ethylacetate (25°C)	: 900 ÷ 1600 m.Pa.s.
- Colour Gardner	: 2 max
- Flashpoint	: >65°C

Applications

As modifiers in nitro-based inks for flexible packaging.
It gives good adhesion on various plastic films.
The ink obtained with **SINTOPOL® DP 90/100%** shall have good heatresistance and shall also resist well to low temperatures.
It could be used as substitute of phtalates, being it a very good plasticizer.

Storage

SINTOPOL® DP 90/100% is stable for at least 2 years if conserved in a cool and dry place and in the original sealed packaging.

Packaging:

200 kgs net iron steel drums

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INFORMATIVE BULLETIN

SINTOPOL® DP 102 / 75% E.A.

Description

SINTOPOL® DP 102/75% E.A. is a 75% solution in ethylacetate of non-reactive thermoplastic urethane resin, with good adhesion on various supports and with good plasticizing properties.

Typical characteristics

- Solid content, %	: 75 ± 2
- Viscosity (Brookfield 25°C)	: 1250 ± 600 m.Pa.s.
- Solvent	: Ethylacetate
- Gardner colour	: 2 max.
- Appearance	: clear , slightly hazy
- Flashpoint	: - 4°C

Applications

SINTOPOL® DP 102/75% E.A. is destinated to the formulation of gravure and flexographic inks with excellent compatibility with cellulose and vinyl filmformers and maleic resins, with good adhesion, low odor, high gloss and good resistance to heatsealing. Due to its excellent plasticizing power, it is a good substitute for phthalates.

The **SINTOPOL® DP 102/75% E.A.** is suitable in inks formulation destined to the in line lamination.

Storage

SINTOPOL® DP 102/75% E.A. is stable for at least 2 years if conserved in a cool and dry area and in the original packaging.

Packaging

200 Kg. net, in steel drums.
1000 kg net IBC or Bulk

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INFORMATIVE BULLETIN

SINTOPOL® DP 160-C / 45% E.A.

Description

SINTOPOL® DP 160-C/45% E.A. is a semi-aliphatic polyurethane resin non-reactive with high molecolar weight.

Typical characteristics

- Solid content, %	: 45 ± 2
- Viscosity (Brookfield 25°C)	: 3000 ± 1000 m.Pa.s.
- Solvent	: Ethylacetate
- Gardner colour	: 2 max.
- Appearance	: Clear or slightly hazy

Applications

SINTOPOL® DP 160-C/45% E.A. form a film with elastomeric properties and is indicated for flexo and gravure printing inks on various flexible films as OPP, PET, OPA.
Offer eccellent adhesion to plastic films, low solvent retention, good flexibility and outstanding lamination bond strength. Resistant to the pasteurization.
Apt for mono-solvent systems.

Storage

SINTOPOL® DP 160-C/45% E.A. is stable for at least 1 years if conserved in a cool and dry area and in the original packaging.

Packaging

IBC 1000 kg or in steel drums 200 Kg. net.

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INFORMATIVE BULLETIN

SINTOPOL® DP 166/42%E.A.

Description

SINTOPOL® DP 166/42% is a semi-aliphatic polyurethane, not reactive, filmforming TDI and Tin free and with a high molecular weight.

Typical characteristics

- Solid content	: 42 ± 2 %
- Viscosity (Brookfield 23°C)	: 3000 ± 1000 m.Pa.s.
- Solvent	: Ethylacetate
- Colour Gardner	: 2 max
- Appearance	: clear , slightly hazy

Applications

SINTOPOL® DP 166/42%E.A. has been developed for formulation of rotogravure and flexo inks destined to the flexible packaging. **SINTOPOL® DP 166/42% E.A.** presents good adhesion on PE, PET, PP, OPA, Saranized or metalized films, paper and Aluminium.
Due to its aliphatic prevalence nature, it has good resistance to UV.
Other interesting characteristics are the good solvent release and the excellent cohesion in laminations.

Storage

SINTOPOL® DP 166/42% E.A. is stable for at least 6 months if conserved in a cool and dry place and in the original sealed packaging.

Packaging:

200 kgs net iron steel drums or IBC

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INFORMATIVE BULLETIN

SINTOPOL® DP 180 / 30% E.A.

Description

SINTOPOL® DP 180/30% E.A. is an aliphatic polyurethane resin with high molecolar weight.

Typical characteristics

- Solid content	: 30 ± 2 %
- Viscosity (Brookfield 25°C)	: 2500 ± 1500 m.Pa.s.
- Solvent	: Ethylacetate
- Gardner colour	: 2 max.
- Appearance	: Clear solution

Applications

SINTOPOL® DP 180/30% E.A. is indicated for flexo and gravure printing inks on various flexible films as OPP, PET, OPA.
The good lamination bond strength, the non-yellowing under effect of UV rays and the excellent resistance to saponification make it a good vehicle for premium inks.
Apt for mono-solvent systems.

Storage

SINTOPOL® DP 180/30% E.A. is stable for at least 1 years if conserved in a cool and dry area and in the original packaging.

Packaging

200 Kg. net, in steel drums or IBC.

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INFORMATIVE BULLETIN

SINTOPOL® DP 266/42%E.A.

Description

SINTOPOL® DP 266/42%E.A. is a pure aliphatic polyurethane, not reactive, filmforming TDI and Tin free and with a high molecular weight.

Typical characteristics

- Solid content	: 42 ± 2 %
- Viscosity (Brookfield 25°C)	: 2500 ± 1500 m.Pa.s.
- Solvent	: Ethylacetate
- Colour Gardner	: 2 max
- Appearance	: clear , slightly hazy

Applications

SINTOPOL® DP 266/42%E.A. has been developed for formulation of rotogravure and flexo inks destined to the flexible packaging. **SINTOPOL® DP 266/42%E.A.** presents a very good adhesion on PE, PET, PP, OPA, Saranized or metalized films, paper and Aluminium.
Due to its aliphatic nature, it has a very good resistance to UV.
Intended for formulation of inks for pasteurizetion and sterilization.
Other interesting characteristics are the good solvent release and the excellent cohesion in laminations.

Storage

SINTOPOL® DP 266/42%E.A. is stable for at least 6 months if conserved in a cool and dry place and in the original sealed packaging.

Packaging:

200 kgs net iron steel drums or IBC

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INFORMATIVE BULLETIN

SINTOPOL® E 222/100%

Description

SINTOPOL® E 222/100% is a polyester resin partially tri-functional.
It can be used for two components low temperature drying polyurethane varnishes, and two components rotogravure inks for paper and plastic films with good gloss and hiding power.

Typical characteristics

- Solids, %	: 100
- Appearance	: very viscous liquid at room's temperature
- Viscosity at 50°C	: 3500 ± 1500 m.Pa.s. (Brookfield)
- Colour Gardner	: 2 max
- Acid no.	: 4 max
- Damp, %	: 0,2 max
- Hydroxyl, %	: 8 ÷ 9

Applications

SINTOPOL® E 222/100% is particularly apt as hydroxyl component in polyurethane varnishes and urethane ink - two components.
The use of **SINTOPOL® E 222/100%** as reactive compound, allows the production of hard and grease-resistant films, which are, at the meantime, flexible and resistant.

Storage

SINTOPOL® E 222/100% is stable for at least 1 year, if conserved in cool and dry area .
Seal the container after using in order to avoid that the product, which is hygroscopic, absorbs the damp.

Packaging

230 Kg. net, in steel drums.

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INFORMATIVE BULLETIN

SINTOPOL® MD 95/75% E.A.

Description

SINTOPOL® MD 95/75% E.A. is a 75% solution in ethylacetate of a urethane polymer, not reactive, with an excellent adhesion on the threated polyolefines.

Typical characteristics

- Solid content, %	: 75 ± 1
- Viscosity, (Brookfield 25°C)	: 1300 ± 400 m.Pa.s.
- Gardner Colour	: 2 max
- Specific weight, gr/ml	: 1,07
- Flashpoint	: - 4°C

Applications

SINTOPOL® MD 95/75% E.A. is a little more plastic polyurethane than **SINTOPOL® MD 100**. Gravure and flexographic inks for treated polyethylene and polypropylene. Plasticizing resin in nitrocellulose based systems with good adhesion, low odour and good temperature resistance. In order to improve the adhesion characteristics and the heatseal resistance, we advise the use, at the moment of printing, of 1 ÷ 2 % of titanium chelate.
Usually the use in the formula of polypropylene microcrystalline waxes is recommended.

Storage

SINTOPOL® MD 95/75% E.A. is stable for at least 2 years if conserved in a cool and dry area and in the original packaging.

Packaging

200 Kg. net, in steel drums.

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INFORMATIVE BULLETIN

SINTOPOL® MD 95 / 100%

Description

SINTOPOL® MD 95/100% is a urethane polymer with an excellent adhesion on the treated polyolefines.

Typical characteristics

- Solid content, % : 99 ÷ 100
- Viscosity : very thick liquid at room's temperature
- Viscosity (75% diluted with ethylacetate) : 1300±400 m.Pa.s.(Brookfield 25°C)
- Gardner colour : 2 max.
- Flashpoint : > 65°C

Applications

SINTOPOL® MD 95/100% is a little more plastic polyurethane than **SINTOPOL® MD 100**. Gravure and flexographic inks for treated polyethylene and polypropylene. Plasticizing resin in nitrocellulose based systems with good adhesion, low odour and good temperature resistance. In order to improve the adhesion characteristics and the heatseal resistance, we advise the use, at the moment of printing, of 1 ÷ 2 % of titanium chelate.
Usually the use in the formula of polypropylene microcrystalline waxes is recommended.

Storage

SINTOPOL® MD 95/100% is stable for at least 2 years if conserved in a cool and dry area and in the original packaging.

Packaging

200 Kg. net, in steel drums.

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INFORMATIVE BULLETIN

SINTOPOL® MD 100/80% E.A.

Description

SINTOPOL® MD 100/80% E.A. is a 80% solution in ethylacetate of a urethane polymer, not reactive, with an excellent adhesion on the threated polyolefines.

Typical characteristics

- Solid content, % : 80 ± 1
- Viscosity, (Brookfield 25°C) : 1400 ± 500 m.Pa.s.
- Gardner Colour : 2 max
- Specific weight, gr/ml : 1,08
- Flashpoint : - 4°C

Applications

Gravure and flexographic inks for treated polyethylene and polypropylene. Plasticizing resin in nitrocellulose based systems with good adhesion, low odour and good temperature resistance. In order to improve the adhesion characteristics and the heatseal resistance, we advise the use, at the moment of printing, of 1 ÷ 2 % of titanium chelate.
Usually the use in the formula of polypropylene microcrystalline waxes is recommended.

Storage

SINTOPOL® MD 100/80% E.A. is stable for at least 2 years if conserved in a cool and dry area and in the original packaging.

Packaging

IBC 1000 kg net
Iron steel drums 200 Kg net

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INFORMATIVE BULLETIN

SINTOPOL® MD 100/100%

Description

SINTOPOL® MD 100/100% is a urethane polymer with an excellent adhesion on the treated polyolefines.

Typical characteristics

- Solid content, %	: 99 ÷ 100
- Viscosity	: very thick liquid at room's temperature
- Viscosity (80% diluted with ethylacetate)	: 1500 ± 600 m.Pa.s. (Brookfield 25°C)
- Gardner colour	: 2 max.
- Flashpoint	: > 65°C

Applications

Gravure and flexographic inks for treated polyethylene and polypropylene. Plasticizing resin in nitrocellulose based systems with good adhesion, low odour and good temperature resistance. In order to improve the adhesion characteristics and the heatseal resistance, we advise the use, at the moment of printing, of 1 ÷ 2 % of titanium chelate.
Usually the use in the formula of polypropylene microcrystalline waxes is recommended.

Storage

SINTOPOL® MD 100/100% is stable for at least 2 years if conserved in a cool and dry area and in the original packaging.

Packaging

200 Kg. net, in steel drums.

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INFORMATIVE BULLETIN

SINTOPOL® MD 110 / 65% E.A.

Description

SINTOPOL® MD 110/65% E.A. is a 65% solution in ethylacetate of a polyurethane resin, not reactive, with good adhesion on different bases and with more heat resistance than **SINTOPOL® MD 100**.

Typical characteristics

- Solid content, %	: 65 ± 1
- Viscosity (Brookfield 25°C)	: 600 ± 250 m.Pa.s.
- Solvent	: ethylacetate
- Gardner colour	: 2 max.
- Appearance	: clear, slightly hazy
- Flashpoint	: - 4°C

Applications

SINTOPOL® MD 110/65% E.A. is destinated to the formulation of gravure and flexographic inks, in combination with cellulose and vinyl filmformers, with good adhesion, gloss and high resistance to heatsealing.
In order to improve the adhesion characteristics on the poliolefines and the heat resistance, we recommend to add, at the moment of use, 1 ÷ 2 % of titanium chelate.

Storage

SINTOPOL® MD 110/65% E.A. is stable for at least 2 years if conserved in a cool and dry area and in the original packaging.

Packaging

200 kg net iron steel drums
1000 kg net IBC or Bulk

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INFORMATIVE BULLETIN

SINTOPOL® MD 110 / 75% E.A.

Description

SINTOPOL® MD 110/75% E.A. is a 75% solution in ethylacetate of a polyurethane resin, not reactive, with good adhesion on different bases and with more heat resistance than **SINTOPOL® MD 100**.

Typical characteristics

- Solid content, % : 75 ± 1
- Viscosity (Brookfield 25°C) : 2600 ÷ 3500 m.Pa.s.
- Solvent : ethylacetate
- Gardner colour : 2 max.
- Appearance : clear , slightly hazy
- Flashpoint : - 4°C

Applications

SINTOPOL® MD 110/75% E.A. is destinated to the formulation of gravure and flexographic inks, in combination with cellulose and vinyl filmformers, with good adhesion, gloss and high resistance to heatsealing.
In order to improve the adhesion characteristics on the poliolefines and the heat resistance, we recommend to add, at the moment of use, 1 ÷ 2 % of titanium chelate.

Storage

SINTOPOL® MD 110/75% E.A. is stable for at least 2 years if conserved in a cool and dry area and in the original packaging.

Packaging

200 kg net iron steel drums
1000 kg net IBC or Bulk

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INFORMATIVE BULLETIN

SINTOPOL® MD 120 / 60% E.A.

Description

SINTOPOL® MD 120/60% E.A. is a polyurethane resin - non reactive - intended for the formulation of gravure and flexographic inks with a good adhesion on a variety of packaging substrates.

Typical characteristics

- Solid content, %	: 60 ± 1
- Viscosity, (Brookfield 25°C)	: 1000 ± 600 m.Pa.s.
- Solvent	: ethylacetate
- Gardner colour	: 2 max.
- Appearance	: clear , slightly hazy
- Flashpoint	: - 4°C

Applications

SINTOPOL® MD 120/60% E.A. in combination with nitrocellulose filmformers is apt for the formulation of gravure and flexographic inks with a good adhesion on various films. The addition of adhesion agents for polyolefine films can be avoided if they have been treated on the surface recently.
The ink obtained with **SINTOPOL® MD 120/60% E.A.** results to be very resistant to scratches and with a superior heatseal resistance.

Storage

SINTOPOL® MD 120/60% E.A. has at least a 2 years stability, if conserved in cool and dry rooms, in the original packaging.

Packaging

200 Kg. net, in steel drums.

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INFORMATIVE BULLETIN

SINTOPOL® SP 75/80% E.A.

Description

SINTOPOL® SP 75/80% E.A. is a urethane resin with good adhesion on polyolefines and with good plasticizing properties.

Typical characteristics

- Solid content, %	: 80 ± 1
- Viscosity, Brookfield 25°C	: 700 ± 300 m.Pa.s.
- Colour, Gardner	: 2 max
- Solvent	: ethylacetate
- Appearance	: clear, slightly hazy
- Flashpoint	: - 4°C

Applications

In combination with film-formers like nitrocellulose, ethylcellulose, ketone resins, etc., it is possible to obtain with **SINTOPOL® SP 75/80% E.A.** gravure and flexographic inks with good flexibility, gloss and adhesion to treated polyethylene and polypropylene.
In order to improve the adhesion characteristics and the heatseal resistance, we advise the use, at the moment of printing, of 1 ÷ 2 % of titanium chelate.
Usually the use in the formula of polypropylene micronised waxes is recommended.

Storage

SINTOPOL® SP 75/80% E.A. is stable for at least 2 years if conseved in a cool and dry place and in the original packaging.

Packaging

200 kg net iron steel drums
1000 kg net IBC

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INFORMATIVE BULLETIN

SINTOPOL® SP 75/100%

Description

SINTOPOL® SP 75/100% is a urethane resin with good adhesion on polyolefines and with good plasticizing properties.

Typical characteristics

- Solid content, %	: 99 ÷ 100
- Viscosity	: thick liquid at room's temperature
- Viscosity (80% diluted with ethylacetate)	: 750 ± 300 m.Pa.s. (Brookfield 25°C)
- Colour Gardner	: 2 max
- Flashpoint	: > 65°C

Applications

In combination with film-formers like nitrocellulose, ethylcellulose, ketone resins, etc. it is possible to obtain, with **SINTOPOL® SP 75/100%**, gravure and flexographic inks with good flexibility, gloss and adhesion to treated polyethylene and polypropylene.
In order to improve the adhesion characteristics and the heatseal resistance, we advise the use, at the moment of printing, of 1 ÷ 2 % of titanium chelate.
Usually the use in the formula of polypropylene micronised waxes is recommended.

Storage

SINTOPOL® SP 75/100% is stable for at least 2 years if conseved in a cool and dry area and in the original packaging.

Packaging

200 Kg. net, in steel drums.

To the best of our knowledge and experience the information contained in this technical sheet is reliable, but it is presented without expressed or implied guarantee or responsibility as to results or patents.

INFORMATIVE BULLETIN

SINTOPOL® SP 75 LV / 80% E.A.

Description

SINTOPOL® SP 75 LV/80% E.A. is a urethane resin with good adhesion on polyolefines and with good plasticizing properties.

Typical characteristics

- Solid content, %	: 80 ± 1
- Viscosity, Brookfield 25°C	: 250 ÷ 550 m.Pa.s.
- Colour, Gardner	: 2 max
- Solvent	: ethylacetate
- Appearance	: clear, slightly hazy
- Flashpoint	: - 4°C

Applications

In combination with film-formers like nitrocellulose, ethylcellulose, ketone resins, etc., it is possible to obtain with **SINTOPOL® SP 75 LV/80% E.A.** gravure and flexographic inks with good flexibility, gloss and adhesion to treated polyethylene and polypropylene.
In order to improve the adhesion characteristics and the heatseal resistance, we advise the use, at the moment of printing, of 1 ÷ 2 % of titanium chelate.
Usually the use in the formula of polypropylene micronised waxes is recommended.

Storage

SINTOPOL® SP 75 LV/80% E.A. is stable for at least 2 years if conseved in a cool and dry place and in the original packaging.

Packaging

200 kg net iron steel drums
1000 kg net IBC

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INFORMATIVE BULLETIN

SINTOPOL® SP 75 LV / 100%

Description

SINTOPOL® SP 75 LV/100% is a urethane resin with good adhesion on polyolefines and with good plasticizing properties.

Typical characteristics

- Solid content, %	: 99 ÷ 100%
- Viscosity, Brookfield 25°C	: 250 ÷ 650 m.Pa.s. (80% in ethylacetate)
- Colour, Gardner	: 2 max
- Appearance	: clear, slightly hazy
- Flashpoint	: >65°C

Applications

In combination with film-formers like nitrocellulose, ethylcellulose, ketone resins, etc., it is possible to obtain with **SINTOPOL® SP 75 LV/100% .**gravure and flexographic inks with good flexibility, gloss and adhesion to treated polyethylene and polypropylene.
In order to improve the adhesion characteristics and the heatseal resistance, we advise the use, at the moment of printing, of 1 ÷ 2 % of titanium chelate.
Usually the use in the formula of polypropylene micronised waxes is recommended.

Storage

SINTOPOL® SP 75 LV/100% is stable for at least 2 years if conserved in a cool and dry place and in the original packaging.

Packaging

200 Kg. net, in steel drums.

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SINTOPOL®
SPECIAL PRODUCTS
AND EXPERIMENTAL

Sede legale & commerciale : 20091 Bresso (MI)- Via Carolina Romani, 1/11 Tel: 02 6103166 - Fax: 02 6105708 - P. IVA 07724840157

INFORMATIVE BULLETIN

SINTOPOL® AD 164SH/30%E.A.

Description

SINTOPOL® AD 164SH/30%E.A. is a pure aliphatic polyurethane, not reactive, with aliphatic prevalence and with a high molecular weight.

Typical characteristics

- Solid content	: 30 ± 2 %
- Viscosity (Brookfield 25°C)	: 1500 ± 700 m.Pa.s.
- Solvent	: Ethylacetate
- Colour Gardner	: 2 max
- Flashpoint	: - 4°C

Applications

SINTOPOL® AD 164SH/30%E.A. has been developed for formulation of inks destined to the flexible packaging, particularly for inks destinated to lamination.
SINTOPOL® AD 164SH/30%E.A. presents good adhesion on PET.
With other binders such nitrocellulose, ketone resins and maleic, etc.., you can get inks with a wide range of applications.

Storage

SINTOPOL® AD 164SH/30%E.A. is stable for at least 6 months if conserved in a cool and dry place and in the original sealed packaging.

Packaging:

200 kgs net iron steel drums or IBC

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INFORMATIVE BULLETIN

SINTOPOL® AD 164 SH/45% E.A.

Description

SINTOPOL® AD 164SH/45%E.A. is a pure aliphatic polyurethane, not reactive, with aliphatic prevalence and with a high molecular weight.

Typical characteristics

- Solid content	: 45 ± 2 %
- Viscosity (Brookfield 25°C)	: 3500 ± 500 m.Pa.s.
- Solvent	: Ethylacetate
- Colour Gardner	: 2 max
- Flashpoint	: - 4°C

Applications

SINTOPOL® AD 164SH/45%E.A. has been developed for formulation of inks destined to the flexible packaging, particularly for inks destinated to lamination.
SINTOPOL® AD 164SH/45%E.A. presents good adhesion on PET.
With other binders such nitrocellulose, ketone resins vinyl and maleic, etc.., you can get inks with a wide range of applications.

Storage

SINTOPOL® AD 164SH/45%E.A. is stable for at least 6 months if conserved in a cool and dry place and in the original sealed packaging.

Packaging:

200 kgs net iron steel drums

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INFORMATIVE BULLETIN

SINTOPOL® AD 164 SH/54% E.A.

Description

SINTOPOL® AD 164SH/54%E.A. is a pure aliphatic polyurethane, not reactive, with aliphatic prevalence and with a high molecular weight. High dry version of Sintopol AD164SH/45%.

Typical characteristics

- Solid content	: 52÷55%
- Viscosity (Brookfield 25°C)	: 7000 ± 1500 m.Pa.s.
- Solvent	: Ethylacetate
- Colour Gardner	: 2 max
- Flashpoint	: - 4°C

Applications

SINTOPOL® AD 164SH/54%E.A. has been developed for formulation of inks destined to the flexible packaging, particularly for inks destinated to lamination.
SINTOPOL® AD 164SH/54%E.A. presents good adhesion on PET.
With other binders such nitrocellulose, ketone resins vinyl and maleic, etc.., you can get inks with a wide range of applications.

Storage

SINTOPOL® AD 164SH/54%E.A. is stable for at least 6 months if conserved in a cool and dry place and in the original sealed packaging.

Packaging:

200 kgs net iron steel drums

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INFORMATIVE BULLETIN

SINTOPOL® DP 160 / 58% E.A.+EtOH

Description

SINTOPOL® DP 160/58% E.A.+EtOH is a semi-aliphatic polyurethane resin non-reactive with high molecolar weight modified for use in flexo.

Typical characteristics

- Solid content, % : 58 ± 2
- Viscosity (Brookfield 25°C) : 6000 ± 2000 m.Pa.s.
- Solvent : Ethylacetate+EtOH
- Gardner colour : 2 max.
- Appearance : Clear or slightly hazy

Applications

SINTOPOL® DP 160/58% E.A.+EtOH form a film with elastomeric properties and is indicated for flexo and gravure printing inks on various flexible films as OPP, PET, OPA.
Offer eccellent adhesion to plastic films, low solvent retention, good flexibility and outstanding lamination bond strength. Resistant to the pasteurization.
Modified for use in Flexography.

Storage

SINTOPOL® DP 160/58% E.A.+EtOH is stable for at least 1 years if conserved in a cool and dry area and in the original packaging.

Packaging

200 Kg. net, in steel drums.

INFORMATIVE BULLETIN

SINTOPOL® DP 160-C / 53% E.A.

Description

SINTOPOL® DP 160-C/53% E.A. is a semi-aliphatic polyurethane resin non-reactive with high molecolar weight.

Typical characteristics

- Solid content, %	: 53 ± 2
- Viscosity (Brookfield 25°C)	: 4500 ± 800 m.Pa.s.
- Solvent	: Ethylacetate
- Gardner colour	: 2 max.
- Appearance	: Clear or slightly hazy

Applications

SINTOPOL® DP 160-C/53% E.A. form a film with elastomeric properties and is indicated for flexo and gravure printing inks on various flexible films as OPP, PET, OPA.
Offer eccellent adhesion to plastic films, low solvent retention, good flexibility and outstanding lamination bond strength. Resistant to the pasteurization.
Apt for mono-solvent systems.

Storage

SINTOPOL® DP 160-C/53% E.A. is stable for at least 1 years if conserved in a cool and dry area and in the original packaging.

Packaging

Steel drums open top 200 Kg. net.
1000 kg net in nonreturnable approved plastic IBC discharge tank 3 inches.

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INFORMATIVE BULLETIN

SINTOPOL® DP 277/42%E.A.

Description

SINTOPOL® DP 277/42%E.A. is a pure aliphatic polyurethane, not reactive, filmforming TDI and Tin free and with a high molecular weight and high melting point.
Modified version of **Sintopol® DP266/42%E.A.** to obtain the same behavioral characteristics and reduction of the raw materials cost.

Typical characteristics

- Solid content	: 42 ± 2 %
- Viscosity (Brookfield 25°C)	: 2500 ± 1500 m.Pa.s.
- Solvent	: Ethylacetate
- Colour Gardner	: 2 max
- Appearance	: clear , slightly hazy

Applications

SINTOPOL® DP 277/42%E.A. has been developed for formulation of rotogravure and flexo inks destined to the flexible packaging. **SINTOPOL® DP 277/42%E.A.** presents a very good adhesion on PE, PET, PP, OPA, Saranized or metalized films, paper and Aluminium.
Due to its aliphatic nature, it has a very good resistance to UV.
Intended for formulation of inks for pasteurizetion and sterilization.
Other interesting characteristics are the good solvent release and the excellent cohesion in laminations.

Storage

SINTOPOL® DP 277/42%E.A. is stable for at least 6 months if conserved in a cool and dry place and in the original sealed packaging.

Packaging:

200 kgs net iron steel drums or IBC

INFORMATIVE BULLETIN

SINTOPOL® DP 282 / 45% E.A.

Description

SINTOPOL® DP 282/45% E.A. is an aliphatic polyurethane resin with high molecolar weight for flexo application.

Typical characteristics

- Solid content	: 45 ± 2%
- Viscosity (Brookfield 25°C)	: 3000 ± 1000 m.Pa.s.
- Solvent	: Ethylacetate
- Gardner colour	: 2 max.
- Appearance	: Clear solution or slightly hazy

Applications

SINTOPOL® DP 282/45% E.A. is indicated for flexo and gravure printing inks on various flexible films as OPP, PET, OPA.
The good lamination bond strength, the non-yellowing under effect of UV rays and the excellent resistance to saponification make it a good vehicle for premium inks.
The product has been modified to increase the alcohol tolerance in flexography.

Storage

SINTOPOL® DP 282/45% E.A. is stable for at least 1 years if conserved in a cool and dry area and in the original packaging.

Packaging

200 Kg. net, in steel drums.

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INFORMATIVE BULLETIN

SINTOPOL® DP 283 / 30% E.A.+EtOH

Description

SINTOPOL® DP 283/30% E.A.+EtOH is an aliphatic polyurethane resin with high molecolar weight for flexo application.

Typical characteristics

- Solid content	: 30 ± 2 %
- Viscosity (Brookfield 25°C)	: 500 ± 200 m.Pa.s.
- Solvent	: Ethylacetate + Ethyl alcohol
- Gardner colour	: 2 max.
- Appearance	: Clear solution or slightly hazy

Applications

SINTOPOL® DP 283/30% E.A.+EtOH is indicated for flexo and gravure printing inks on various flexible films as OPP, PET, OPA.
The good lamination bond strength, the non-yellowing under effect of UV rays and the excellent resistance to saponification make it a good vehicle for premium inks.
The product has been modified to increase the alcohol tolerance in flexography.

Storage

SINTOPOL® DP 283/30% E.A.+EtOH is stable for at least 1 years if conserved in a cool and dry area and in the original packaging.

Packaging

190 Kg. net, in steel drums or IBCs 900 Kg net.

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INFORMATIVE BULLETIN
Experimental Product
SINTOPOL® HS 186/57%E.A.+EtOH

Description

SINTOPOL® HS 186/57%E.A.+EtOH is a semi-aliphatic polyurethane, not reactive, filmforming TDI and Tin free and with a high molecular weight.

Typical characteristics

- Solid content	: 57 ± 2 %
- Viscosity (Brookfield 23°C)	: 4300÷5700 m.Pa.s.
- Solvent	: Ethylacetate (about 30%)+Ethyl Alcohol(about 70%)
- Colour Gardner	: 2 max
- Appearance	: clear or slightly hazy

Applications

SINTOPOL® HS 186/57%E.A.+EtOH has been developed for formulation of rotogravure and flexo inks destined to the flexible packaging. **SINTOPOL® HS 186/57%E.A.+EtOH** presents good adhesion on PE, PET, PP, OPA, Saranized or metalized films, paper and Aluminium.
Due to its aliphatic prevalence nature, it has good resistance to UV.
Other interesting characteristics are the good solvent release and the excellent cohesion in laminations.
Titanium dioxide can be dispersed directly into the resin. For colored products, **SINTOPOL® HS 186/57%E.A.+EtOH** should be combined with NC-based pigments.

Storage

SINTOPOL® HS 186/57%E.A.+EtOH is stable for at least 6 months if conserved in a cool and dry place and in the original sealed packaging.

Packaging:

200 kgs net iron steel drums or IBC

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INFORMATIVE BULLETIN
Experimental Product
SINTOPOL® HS 466/55% E.A.+EtOH

Description

SINTOPOL® HS 466/55% E.A.+EtOH is an aliphatic polyurethane resin with high molecolar weight and high solid for flexo and roto application.

Typical characteristics

- Solid content	: 55 ± 2%
- Viscosity (Brookfield 25°C)	: 1000 ÷ 2000 m.Pa.s.
- Solvent	: Ethylacetate(30%)+Ethyl Alcohol(70%)
- Gardner colour	: 2 max.
- Appearance	: Clear solution or slightly hazy

Applications

SINTOPOL® HS 466/55% E.A.+EtOH is indicated for flexo and gravure printing inks on various flexible films as OPP, PET, OPA.
The excellent bond strength, the non-yellowing under effect of UV rays and the excellent resistance to saponification make it a good vehicle for premium inks.
The high solid content allows the use of small quantities of film forming such NC and PVB.

Storage

SINTOPOL® HS 466/55% E.A.+EtOH is stable for at least 1 years if conserved in a cool and dry area and in the original packaging.

Packaging

200 Kg. net, in steel drums or as request.

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INFORMATIVE BULLETIN

SINTOPOL® MD 105 / 75% E.A.+IPA

Description

SINTOPOL® MD 105/75% E.A.+IPA is a 75% solution in ethylacetate and Isopropyl alcohol of a polyurethane resin, not reactive, with good adhesion on different bases.

Typical characteristics

- Solid content, %	: 75 ± 2
- Viscosity (Brookfield 25°C)	: 500 ÷ 1500 m.Pa.s.
- Solvent	: Ethylacetate(89%)+ Isopropyl alcohol(11%)
- Gardner colour	: 2 max.
- Appearance	: clear , slightly hazy
- Flashpoint	: - 4°C

Applications

SINTOPOL® MD 105/75% E.A.+IPA is destinated to the formulation of gravure and flexographic inks with excellent compatibility with cellulose and vinyl filmformers and maleic resins, with good adhesion, low odor, high gloss and good resistance to heatsealing.

In order to improve the adhesion characteristics on the poliolefines and the heat resistance, we recommend to add, at the moment of use, 1 ÷ 2 % of titanium chelate.

The **SINTOPOL® MD 105/75% E.A.+IPA** is suitable in inks formulation destined to the in line lamination.

Storage

SINTOPOL® MD 105/75% E.A.+IPA is stable for at least 1 year if conserved in a cool and dry area and in the original packaging.

Packaging

200 Kg. net, in steel drums.

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INFORMATIVE BULLETIN

SINTOPOL® MD 105 / 75% E.A.

Description

SINTOPOL® MD 105/75% E.A. is a 75% solution in ethylacetate of a polyurethane resin, not reactive, with good adhesion on different bases.

Typical characteristics

- Solid content, %	: 75 ± 2
- Viscosity (Brookfield 25°C)	: 1500 ± 500 m.Pa.s.
- Solvent	: Ethylacetate
- Gardner colour	: 2 max.
- Appearance	: clear , slightly hazy
- Flashpoint	: - 4°C

Applications

SINTOPOL® MD 105/75% E.A. is destinated to the formulation of gravure and flexographic inks with excellent compatibility with cellulose and vinyl filmformers and maleic resins, with good adhesion, low odor, high gloss and good resistance to heatsealing.

In order to improve the adhesion characteristics on the poliolefines and the heat resistance, we recommend to add, at the moment of use, 1 ÷ 2 % of titanium chelate.

The **SINTOPOL® MD 105/75% E.A.** is suitable in inks formulation destined to the in line lamination.

Storage

SINTOPOL® MD 105/75% E.A. is stable for at least 1 year if conserved in a cool and dry area and in the original packaging.

Packaging

200 Kg. net, in steel drums.
1000 kg net IBC or Bulk

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INFORMATIVE BULLETIN

SINTOCOLL® 5010/37%E.A.

Description

SINTOCOLL® 5010/37%E.A. is a Adhesive based on polyester resin with very high molecular weight in Ethil Acetate apt for lamination coupling.

Typical characteristics

- Solid content : 37 ± 2 %
- Viscosity (Brookfield 25°C) : 1300 ± 300 m.Pa.s.
- Solvent : Ethylacetate
- Colour Gardner : < 3
- Appearance : transparent liquid

Applications

SINTOCOLL® 5010/37%E.A. is used for bonding PET and supports in aluminum, copper, wood, paper, textiles and polyolefins.
Due to its formulation characteristics it gives to coupling a very high thermal stability.

Technical features

SINTOCOLL® 5010/37%E.A. can be used added with hardener like L75, obtaining a thermosetting preparation.
The reaction is completed after 7 days at room temperature. The use of heat sources is suggested to reduce the crosslinking time.

Utilization

100 p/p ratio of SINTOCOLL® 5010 and 5-10 p/p of L75.

Dilution

The adhesive system can be diluted according with the processing needs. Eventual dilutions must be carried out before adding the catalyst.
To obtain:

RS (%)	5010 (p/p)	L75 (p/p)	SOLVENTE (p/p)
30	100	5	30
25	100	5	60
20	100	5	100

Storage

SINTOCOLL® 5010/37%E.A. is stable for at least 6 months if conserved in a cool and dry place and in the original sealed packaging and at a temperature between 5° and 40 °C.

Packaging:

200 kgs net iron steel drums or pails of 25kg.

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INFORMATIVE BULLETIN

SINTOPOL® DP 477/55% E.A.+EtOH

Description

SINTOPOL® DP 477/55% E.A.+EtOH is an aliphatic polyurethane resin with high molecolar weight and high solid for flexo and roto application.

Typical characteristics

- Solid content	: 55 ± 2%
- Viscosity (Brookfield 25°C)	: 1600 ± 500 m.Pa.s.
- Solvent	: Ethylacetate(30%)+Ethyl Alcohol(70%)
- Gardner colour	: 2 max.
- Appearance	: Clear solution or slightly hazy

Applications

SINTOPOL® DP 477/55% E.A.+EtOH is indicated for flexo and gravure printing inks on various flexible films as OPP, PET, OPA.
The excellent bond strength, the non-yellowing under effect of UV rays and the excellent resistance to saponification make it a good vehicle for premium inks.
The high solid content allows the use of small quantities of film forming such NC and PVB or complete removal.

Storage

SINTOPOL® DP 477/55% E.A.+EtOH is stable for at least 1 years if conserved in a cool and dry area and in the original packaging.

Packaging

200 Kg. net, in steel drums or as request.