

Customized Solution

KAFRIT Group Masterbatches and Compounds

**PEX**

 **CONSTAB CN**

Working together for the future of plastics.



Kafrit Group is a leading producer of Masterbatches and Compounds for the plastics industry and currently employs more than 470 people. In 2021, the Group achieved USD 302 million \$ turnover with an available capacity of more than 120,000 MT. Moreover, the company is active on a global scale and has set up production sites all over the world.

All of this began in 1973 when the company was founded in Israel. Since then, the company has grown primarily via acquisition.

Today, the Kafrit Group incorporates **Kafrit Industries (1993) Ltd. in Israel, CONSTAB Polyolefin Additives GmbH in Germany, China's Suzhou Constab Engineering Plastics Co. LTD, Polyfil Inc. in the USA, the Canada-based Kafrit NA Ltd. and Addvanze AB in Sweden.** With more than 50 years of experience in the plastics processing industry, the company can draw on high levels of expertise and technical know-how. Kafrit Group places a high value on sustainability and has made it to one of the cornerstones of our corporate strategy.

Our unbridled dedication to environmental, social and financial issues makes us to one of the leading business partners in the plastics industry. Our customers value our passion and appreciate our ecological awareness and social commitment. Moreover, they recognize our world leading services and consider our products as among the best within our industry.

We develop and produce cost-efficient solutions which will enhance the completion of high-quality end products in many areas of the plastics industry, such as packaging films (BOPP, BOPE, CPP, PE), PC sheet, agricultural films and derivatives, biopolymers, flame retardant applications, PEX, pipes, fibers and nonwovens.

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 Kafrit Group production sites  Agencies/Distribution

 Kafrit Group production sites  Agencies/Distribution

## Our Purpose

# Unite talent and technology to drive the future of plastics, together.

This purpose is the driving force of our organization. The reason we do what we do, why we come to work every day. And although our group is made of many different Companies around the world, our purpose unites us.

These three pillars support our purpose

### TOGETHER TO THE FUTURE

The world doesn't stand still, and nor do we. We're always looking ahead, searching for new ways to sustainably grow and thrive. To push our technology and keep working on the next generation of solutions to benefit our customers. Working together in perfect synergy to achieve something great, today and tomorrow.

### TALENT

Around the world, we have hundreds of talented colleagues and partners. All with unique skills, multidisciplinary knowledge, and deep industry experience. Innovators with brilliant ideas and the drive to see them through. People striving for excellence in everything they do.

### TECHNOLOGY

After decades in the plastics industry, we have more than high levels of expertise, a strong focus on customer service, and vast technical knowledge. We also have a burning passion for innovation and transformation. A passion that drives us to seek out new solutions, new machinery, and fresh ways to give our customers just what they need.

Together we have the power to drive the future of plastics – within our community and around the world. And we'll keep doing it, today, tomorrow and always.

But the real magic happens when we work together. There's a spark, an energy. A belief that anything is possible. And that's how we provide the best solutions for our customers.

And with the latest technology in our hands and new innovations within our grasp, there's only one question. How far can we go?

Defining new production goals

# Experience the new high performance products

## Research that takes us to the top

Throughout our company history, research and development have always been a key area of our expertise. Kafrit employs a staff of more than 470 people that work on innovative products and make use of our vast pool of knowledge that we developed in 50 years of experience in the plastics industry. Our experts optimize and develop additive concentrates, flame retardants, color concentrates, and compounds for various applications.

Kafrit enjoys a close partnership with renowned research institutions at the Shenkar University in Israel and at different universities in Germany. Moreover, we maintain a strong co-operation with well-known suppliers including machine manufacturers that do recommend our products for use in combination with their machines.

## About Us

Forging ahead for 25 years, Suzhou Constab Engineering Plastics Co., Ltd. has been a leading manufacturer of masterbatches additives for plastic films and PEX (silane cross-linked polyethylene) in Asia Pacific. Founded in 1999, our company, as a member of Constab Group from Germany, has been committed to producing and developing high quality materbatches. In 2003, we had another chance to be part of Silon International whose high-tech and know-how supported us to be the leading company of PEX industry in China. In 2008, CONSTAB was acquired by the Kafrit Group. Our PEX and masterbatches and those of the entire Kafrit Group are now traded all over the world. The main applications of materbatches are BOPP, CPP, PE, agricultural and other packaging films, and PEX is mainly applied for temperature resistance piping systems.

Leading analysis of research and development together with devoted technical service enable us to have a better understanding of our clients' demands. We have been committed to integrated solutions for films and pipes manufacturers, which can expand the application fields of your end products. In addition, your fully trust and close cooperation with us will help improve product performance and diversify our products. With the stable, accurate and efficient products, better service in CONSTAB CN is waiting for you.

With the opening of new plant, CONSTAB CN is working together with you for the future of plastics!

## Our Purpose

To unite talent and technology  
To drive the future of plastics,  
Together.

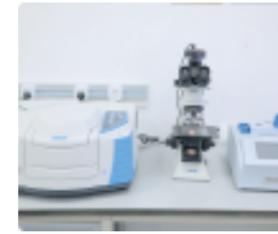
## Our Mission

To provide best quality products and most suitable solutions  
To provide high-level customer service and technical support  
To develop professional staffs with health and safety  
To create great future of plastics with sustainability



## Overview of Advanced Lab Equipments

FTIR and Melting point apparatus



Nitrogen and Sulfur analyzer



Particle size analyzer



FTIR



Microwave muffle



Cast film



## Applicaiton Field



BOPP&CPP



BOPE



PE



PEX



POF

## Product Features

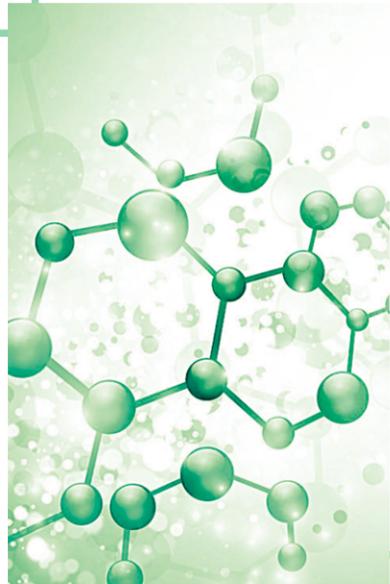
- Antiblock
- Slip
- Slip antiblock
- Nucleate
- Antistatic
- Slip antistatic
- Antifog
- Matte compounds
- Processing aids
- Heat Stabilizer
- UV block
- Light stabilizer
- Polymer Modification
- CONSLIP® Products
- PEX

## Honor Certificate

ISO 9001 Quality Management System,  
ISO 14001 Environmental Management System certifications  
ISO 45001 Occupational Health and Safety Management System

## 01 INTRODUCTION

PEX technology is the cross-linking of polyethylene. By modifying the polymer and changing its characteristics using additives. There are other advantages in comparison with uncross-linked



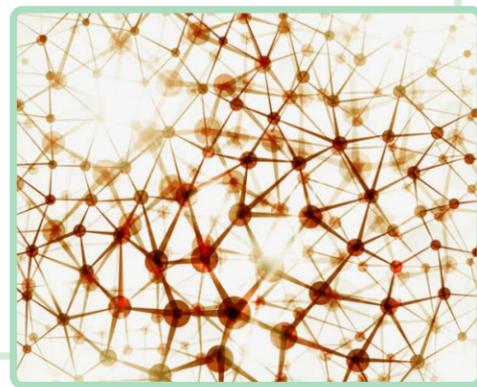
- Improved obtain longer service life at higher temperature environment
- Improved ageing resistance
- Improved chemical resistance
- Improved abrasion resistance
- Improved impact strength
- Reduced rapid crack propagation (RCP), even at low temperature
- Improved environmental stress crack resistance (ESCR)
- Outstanding resistance to slow-crack growth

The following three methods are mainly used for cross-linking polyethylene :

- Peroxide cross-linking : PE-Xa
- Silane cross-linking : PE-Xb
- Irradiation cross-linking : PE-Xc

### The advantages of the silane process:

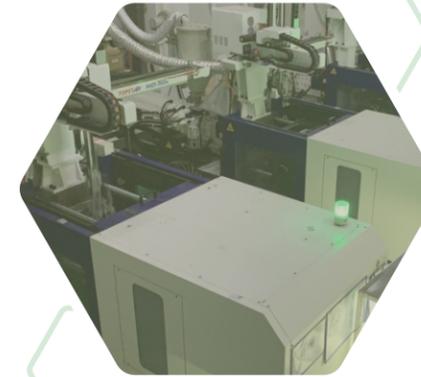
- Compared to other crosslinking processes, the Silane method uses cost-effective technology which does not require investment in high-cost equipment such as electron accelerators or continuous vulcanisation.
- In addition, Silane technology allows high extrusion speeds to be achieved and the process produces less start-up waste material.
- The three-dimensional structure of the crosslinked network allows the required mechanical properties to be achieved at low crosslink densities.
- The ageing resistance of Silane crosslinked Polyethylene is superior fo that made via the peroxide or irradiation processes.
- The simple and stable nature of the Silane crosslinking technology allows a wide variety of Compound types to be processed, including the extrusion of Polyethylene Compounds containing mineral fillers.



The PEX produced by Suzhou Constab engineering Plastics Co., Ltd. is mainly used in heat resistant pipe systems, such as PEX pipe, aluminum-plastic composite pipe, steel-plastic composite pipe, oxygen resistance pipe and other hot water delivery pipe. After several years of technical accumulation and application exploration, it can be extended to other applications after adding appropriate auxiliary components:

### Extrusion process

- Corrosive chemicals and other pipelines such as hot seawater and oil
- Piping used in harsh installation conditions
- High ultraviolet radiation intensity of the application of the pipe
- Friction resistant piping
- Other special pipes and products



### Injection process

- Temperature ( $\leq 200^{\circ}\text{C}$ ) application environment injection products
- Plastic injection products resistant to chemical corrosion
- Other non-cross-linked PE is not suitable for injection molding products that can meet the demand after cross-linked

### Other applications

- Injection-blow molding process
- Lining plastic process

**Note:** You need to add auxiliary components according to specific requirements. For details, please consult CONSTAB technical personnel.

## 02 PRODUCT

### 2.1 SZCONSTAB Sioplas Compounds-TA11XX HD / FP10XXLD

Grade	Density *	Gel content	MFR **	Application
TA 1122HD	948	71%	1.1	Single / multi-layers /composite pipes
TA 1123HD	945	72%	1.1	Single / multi-layers pipes
FP 1021LD	905	80%	2.5	Flexible connection pipes
FP 1022LD	905	80%	2.7	Health flexible connection pipes

\*Kg / metre<sup>3</sup> \*\*grams per 10 minutes,190°C 5kg

The listed parameters are typical production values. Tailor-made formulations to specific customer requirements are possible.

## 2.2 SZCONSTAB Catalyst masterbatch-TA21XX HD / FP20XXLD

The TA21XX HD / FP20XXLD catalyst masterbatch products are designed to produce colorless pipes or in formulations including the customer's own color masterbatch. CONSTAB catalyst masterbatch assures high degrees of gel content and economical curing periods. The included stabilizer package guarantees the required long-term performance of the finished pipes.

Catalyst masterbatch	Application
TA 2120HD	Standard pipe
TA 2121HD; TA 2127HD; TA 2142HD	Using brass fittings
FP 2010LD; FP 2011LD	Special for flexible connection pipes

## 2.3 SZCONSTAB Processing Aid Masterbatch-PA08XXHD/PA08XXLD

The **PA08XXHD** range of processing aids allows pipes to be manufactured with an improved surface appearance. They contain highly efficient additives designed for extrusion.

Using the **PA08XXHD** processing aid leads to the following benefits:

- ◆ enlarged production periods
- ◆ reduced level of die build-up and improved surface quality
- ◆ increased output and rate of finished products

### SZCONSTAB standard grades of processing aid masterbatch

PA08XXHD Processing Aid Masterbatch	Application
PA 0835HD	PEX and PE-RT processing
PA 0851LD	PE-RT processing

## 03 PROCESSING

### The components of the system should be mixed in the following proportions:

- ◆ 95%TA11XX HD/FP10XXLD series compound
- ◆ 5%TA21XX HD/FP20XXLD series catalyst masterbatch

⚠ Please note that the level of the catalyst masterbatch should not be reduced below the recommended content of the formulation. This will ensure that the pipe is correctly stabilized for long-term service life and satisfactory performance.

It is very important to understand, that the mixture of grafted PE and catalyst masterbatch is potentially reactive. Therefore the mixing of these materials should only be done directly before processing them. Already mixed materials have to be fabricated during 2 hours.

Inside the barrel, the cross-linking process will start slowly. Here all the necessary elements to speed up the reaction are present. ( E. g. the cross-linking catalyst, elevated temperature and moisture is present drawn in from the environmental air )

⚠ Please refer to the recommendations given in 3.3 "Stopping the line" to prevent problems during normal production.

### Extrusion:

SZCONSTAB silane cross-linking technology does not require existing extrusion equipment to be modified. The components of the TA/FP system are processed in an identical manner to standard thermoplastic polyethylene compounds of similar density and melt-flow characteristics.

To ensure excellent processing of the SZCONSTAB TA/FP system the use of a processing aid masterbatch is recommended. An addition of 0.5-2.0% of these masterbatches guaranties best extrusion results.



### 3.1 Extruder conditions

The TA/FP series compounds can be processed on most modern thermoplastics extruders without any problems. Especially if the screw is designed for polyethylene, excellent products can be expected.

### 3.2 Pre-drying of materials

If the extrusion takes place under normal environment conditions, there is no need of pre-drying either the graft or the catalyst. During the manufacturing at SZCONSTAB, a very low content of water in these products is insured.

In areas with exceptionally high humidity, pre-drying of the catalyst masterbatches can improve the extrusion results.

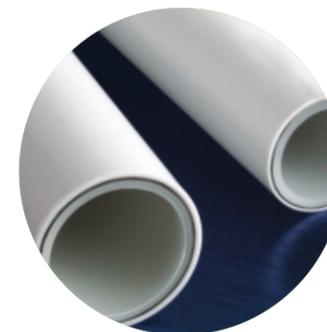
If the unspecified color masterbatch is used, pre-drying is recommended. This will prevent any additional water that could cause premature cross-linking from entering the process.



### 3.3 Stopping the line

For line stops of less than 5 minutes, no precaution has to be taken. However it is recommended to keep the extruder running at low screw speed during maintenance of other parts of the extrusion line.

If the extruder is stopped for a longer period of time, the cross-linking reaction will slowly start. Therefore, in case of extended or plannable stops the extruder should be immediately flushed by processing a normal HDPE , MFR (190°C/ 2.16kg ) 0.3g/10min or lower. If all melt of the system has been removed from the barrel and the tools by purging the line, restarting will be possible as usual. If the line contains elements without streamline shape e.g. complicated mixing units on the screw or dead ends in the die head, it can be necessary to remove the screw and die from the line and exhaustive clean the interior surfaces.



## 04 STORAGE OF MATERIALS

The TA11XX HD/FP10XXLD series compounds can be stored for up to a maximum of nine months, provided that:

- ◆ the packaging is opened only shortly before processing
- ◆ the packaged product is stored in a cool and dry place

The shelf life of the catalyst TA21XX HD/FP20XXLD and the processing aid masterbatch PA08XX HD is 18 months. These products have to be stored in a cool and dry place, and should not be exposed to direct sunlight.

## 05 METHODS OF CROSS-LINKING

TA11XX HD/FP10XXLD compounds are extruded together with the TA21XX HD/FP20XXLD Catalyst Masterbatch into pipes. During the extrusion process, the cross-linking of product is initiated. However in this stage of the production the degree of cross-linking is very low. Cross-linking takes place at elevated temperatures in the presence of water.

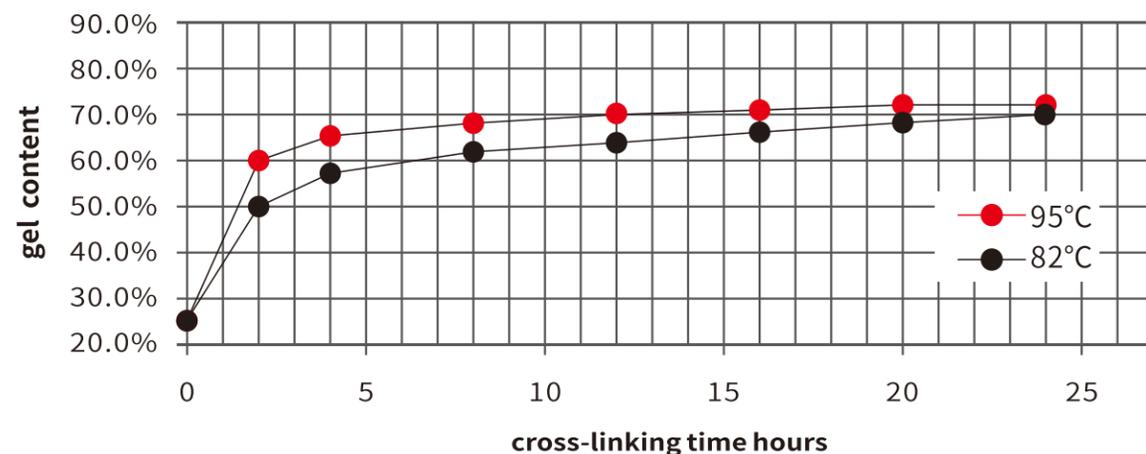
### Cross-linking is normally carried out by:

- ◆ immersing the pipe in a hot water bath
- ◆ treating the pipe with super-heated steam
- ◆ circulating hot-water through the pipe

### Cross-linking is accelerated by:

- ◆ increasing the temperature ( using hot water or steam )
- ◆ allowing the hot water or steam to be in contact with both the inner and the outer surfaces of the pipe
- ◆ choose high-concentration catalyst masterbatches

Please contact our technical service department for assistance on the right cross-linking conditions for the TA11XX HD/FP10XXLD compounds, or please refer to the following graph for information.



## TA1122HD

A chemically cross-linkable HDPE compound for production of single / multi-layers / composite pipes for domestic hot and cold water, under floor heating and central heating application.

### Description:

TA1122HD is a cross-linkable compound made by silane grafted ethylene polymer according to 2 step or SIOLPLAS process. This graft polymer constitutes together with a masterbatch containing the cross-linking catalyst and stabilizer. Pipe produced with TA1122HD fulfils the 165h, 1000h, 8760h static pressure test by National Test Center of Polymer And Chemical Building Materials and has obtained the PE-X 100 rating report from ELEMENT testing agency in Sweden. Sanitary safety data is approved «Standard for safety evaluation of equipment and protective materials in drinking water system»(GB/T 17219-1998) by Institute of Environmental Health Monitoring, Chinese Academy of Preventive Medicine.

TA1122HD can be extruded as a normal thermoplastic polymer. Once touching with moisture, the cross-linking reaction will be started. Already mixed graft and catalyst has to be fabricated during 2 hours.

### Typical Physical Properties:

Properties	Test Method	Unit	Typical Value
Density	GB/T1033.1	g/cm <sup>3</sup>	0.948
Bulk density	GB/T1636	g/cm	0.53
Melt flow index(190°C/5kg)	GB/T3682	g/10min	1.10
Volatile total	CON4.3	%	0.32
Tensile strength at break	GB/T1040.3	Mpa	27
Elongation at break	GB/T1040.3	%	480
Gel content	CON12.2	%	71

### TA1122HD的加工

#### Proportions:

Please note that the level of catalyst masterbatch should not be reduced below 5%. If color masterbatch or process aid is added, the content of graft polymer should be reduced accordingly. In general, all types of masterbatch should be dried before extrusion.

#### Extruder:

TA1122HD can be processed on most modern thermoplastic extruders without problem. Particularly if the available screw is designed for high density polyethylene, excellent products can be expected.

Screw Parameters: Length-to-diameter(L/D) ratio >25 Compression ratio 3-2.5:1

#### Typical Temperature Profile (Reference only):

Zone 1	Zone 2	Zone 3	Zone 4	Head	Die	Screw
160-170°C	170-180°C	180-190°C	190-200°C	200-210°C	190-220°C	70-90°C

#### Suggestion for best extrusion:

- Pre-dry the catalyst masterbatch and color masterbatch at a temperature of 80-90°C for 2 hours.
- Reasonable design of head and die to obtain a streamline production.
- When the machine is restarted after stopping more than 10-15min, it should be purged by HDPE(MFI,190°C /2.16kg:0.3g/min).
- Material with broken bags should not be used.

#### Cross-linking:

Cross-linking method is immersion in hot water or exposure to low pressure steam. The period required to obtain the final gel content depends on the thickness, concentration of catalyst and temperature.

#### Storage:

The storage life is nine months if **TA1122HD** can be stored in a suitable condition.

- The package is opened only shortly before processing.
- The product has to be stored in a cool and dry place.

#### Packing:

Graft polymer: Aluminium-plastics bags containing 25kg, sealed under vacuum.

## TA1123HD

A chemically cross-linkable HDPE compound for production of single / multi-layers pipes for domestic hot and cold water, under floor heating and central heating application.

#### Description:

**TA1123HD** is a cross-linkable compound made by silane grafted ethylene polymer according to 2 step or SIOPLAS process. This graft polymer constitutes together with a masterbatch containing cross-linking catalyst and stabilizer. Pipe produced with **TA1123HD** has advantages of excellent long-term property, better flexibility and easy to bend, low cross-linking shrinkage and high environment stress crack resistance.

**TA1123HD** can be extruded as a normal thermoplastic polymer. Once touching with moisture, the cross-linking reaction will start. Already mixed graft and catalyst has to be fabricated during 2 hours.

#### Typical Physical Properties:

Properties	Test Method	Unit	Typical Value
Density	GB/T1033.1	g/cm <sup>3</sup>	0.945

Bulk density	GB/T1636	g/cm <sup>3</sup>	0.53
Melt flow index(190°C/5kg)	GB/T3682	g/10min	1.10
Volatile total	CON4.3	%	0.32
Tensile strength at break	GB/T1040.3	Mpa	25
Elongation at break	GB/T1040.3	%	480
Gel content	CON12.2	%	72

#### Proportions:

Please note that the level of catalyst masterbatch should not be reduced below 5%. If color masterbatch or process aid is added, the content of graft polymer should be reduced accordingly. In general, all types of masterbatch should be dried before extrusion.

#### Extruder:

**TA1123HD** can be processed on most modern thermoplastic extruders without problem. Particularly if the available screw is designed for high density polyethylene, excellent products can be expected. Screw Parameters: Length-to-diameter(L/D) ratio >25 Compression ratio 3-2.5:1

#### Typical Temperature Profile (Reference only)

Zone 1	Zone 2	Zone 3	Zone 4	Head	Die	Screw
150-160°C	160-170°C	170-180°C	180-190°C	190-200°C	190-210°C	70-90°C

#### Suggestion for best extrusion:

- Pre-dry the catalyst masterbatch and color masterbatch at a temperature of 80-90°C for 2 hours.
- Reasonable design of head and die to obtain a streamline production.
- When the machine is restarted after stopping more than 10-15min, it should be purged by HDPE(MFI,190°C /2.16kg:0.3g/min).
- Material with broken bags should not be used.

#### Cross-linking:

Cross-linking method is immersion in hot water or exposure to low pressure steam. The period required to obtain the final gel content depends on the thickness, concentration of catalyst and temperature.

#### Storage:

The storage life is nine months if **TA1123HD** can be stored in a suitable condition.

- The package is opened only shortly before processing.
- The product has to be stored in a cool and dry place.

#### Packing:

Graft polymer: Aluminium-plastics bags containing 25kg, sealed under vacuum.

## FP1021LD

A chemically cross-linkable LDPE compound for the production of high-flexible pipes or tubes for sanitary application like flexible connections or shower hose.

### Description:

FP1021LD is a cross-linkable compound made by silane grafted ethylene polymer according to 2 step or SIOLPLAS process. This graft polymer constitutes together with a masterbatch containing cross-linking catalyst and stabilizer. Sanitary safety data of pipe produced with FP1021LD is approved «Standard for safety evaluation of equipment and protective materials in drinking water system»(GB/T 17219-1998).

FP1021LD can be extruded as a normal thermoplastic polymer.

### Typical Physical Properties:

Properties	Test Method	Unit	Typical Value
Density	GB/T1033.1	g/cm <sup>3</sup>	0.905
Bulk density	GB/T1636	g/cm <sup>3</sup>	0.42
Melt flow index(190°C/5kg)	GB/T3682	g/10min	2.50
Volatile total	CON4.3	%	0.30
Moisture	CON45.1	%	<0.02
Tensile strength at break	GB/T1040.3	Mpa	19
Elongation at break	GB/T1040.3	%	480
Gel content	CON12.2	%	≥70
Hardness shore A	GB/T2411		92

### Extruder:

FP1021LD can be processed on most modern thermoplastic extruders without problems. Particularly if the available screw is designed for low density polyethylene, excellent products can be expected.

Screw Parameters: Length-to-diameter(L/D) ratio >25 Compression ratio 3-2.5:1

### Typical Temperature Profile (Reference only)

Zone 1	Zone 2	Zone 3	Zone 4	Head	Die	Screw
140-160°C	160-170°C	160-170°C	160-170°C	170-200°C	170-200°C	70-90°C

### Suggestion for best extrusion:

- Material preconditioning to ambient temperature before the package opening is necessary, to avoid moisture condensation on the pellet surface.
- Use screw suitable for LDPE.
- Reasonable design of head and die to obtain a streamline production.
- When the machine is restarted after stopping more 10-15min, it should be purged by LDPE(MFI,190°C /2.16kg:0.3g/min).

### Cross-linking:

Cross-linking method is immersion in hot water or exposure to low pressure steam. The period required to obtain the final gel content depends on the thickness, concentration of catalyst and temperature.

### Storage:

The storage life is nine months if FP1021LD can be stored in a suitable condition.

- The package is opened only shortly before processing.
- The product has to be stored in a cool and dry place.

### Packing:

Graft polymer: Aluminium-plastics bags containing 20kg, sealed under vacuum.

## FP1022LD

A chemically cross-linkable LDPE compound for the production of high-flexible pipes or tubes for sanitary application like flexible connections or shower hose.

### Description:

FP1022LD is a cross-linkable compound made by silane grafted ethylene polymer according to 2 step or SIOLPLAS process. This graft polymer constitutes together with a masterbatch containing cross-linking catalyst and stabilizer. Sanitary safety data of pipe produced with FP1022LD is met the test requirements of NSF-61.

FP1022LD can be extruded as a normal thermoplastic polymer.

### Typical Physical Properties:

Properties	Test Method	Unit	Typical Value
Density	GB/T1033.1	g/cm <sup>3</sup>	0.905
Bulk density	GB/T1636	g/cm <sup>3</sup>	0.42

Melt flow index(190°C/5kg)	GB/T3682	g/10min	2.70
Volatile total	CON4.3	%	0.34
Moisture	CON45.1	%	<0.02
Tensile strength at break	GB/T1040.3	Mpa	18
Elongation at break	GB/T1040.3	%	460
Gel content	CON12.2	%	≥70
Hardness shore A	GB/T2411		92

#### Extruder:

FP1022LD can be processed on most modern thermoplastic extruders without problems. Particularly if the available screw is designed for low density polyethylene, excellent products can be expected.

Screw Parameters: Length-to-diameter(L/D) ratio >25 Compression ratio 3-2.5:1

Typical Temperature Profile (Reference only)

Zone 1	Zone 2	Zone 3	Zone 4	Head	Die	Screw
140-160°C	160-170°C	160-170°C	160-170°C	170-200°C	170-200°C	70-90°C

#### Suggestion for best extrusion:

- Material preconditioning to ambient temperature before the package opening is necessary, to avoid moisture condensation on the pellet surface.
- Use screw suitable for LDPE.
- Reasonable design of head and die to obtain a streamline production.
- When the machine is restarted after stopping more 10-15min, it should be purged by LDPE(MFI,190°C /2.16kg:0.3g/min).

#### Cross-linking:

Cross-linking method is immersion in hot water or exposure to low pressure steam. The period required to obtain the final gel content depends on the thickness, concentration of catalyst and temperature.

#### Storage:

The storage life is nine months if FP1022LD can be stored in a suitable condition.

- The package is opened only shortly before processing.
- The product has to be stored in a cool and dry place.

#### Packing:

Graft polymer: Aluminium-plastics bags containing 20kg, sealed under vacuum.

## Catalyst masterbatch

### Catalyst Masterbatch

#### Description:

TA21XXHD/FP20XXLD masterbatch is for the use with TA11XXHD/FP10XXLD silane cross-linkable PE compounds. TA21XXHD/FP20XXLD contains cross-linking catalyst and antioxidant. In addition, it carries a part of the long-term stabilizing system for the finished product.

#### Appearance:

Colorless, translucence

#### Physical:

Pellets

#### Applications:

TA21XXHD/FP20XXLD is a catalyst masterbatch of the SIOPLAS system for the production of sanitary pipe.

#### Addition levels:

Catalyst masterbatch and graft polymer normally being added in the ratio of 95 parts graft polymer to 5 parts masterbatch. This formulation insures optimum processing and performance of the PEX material.

#### Combinations:

TA21XXHD/FP20XXLD can be combined with most plastics additives, with certain antioxidants, the cross-linking effectiveness may be reduced.

#### Combinations:

TA21XXHD/FP20XXLD is supplied in 25KG bags made of Al-plastic or in 1.32kg bags made of PE.

#### Storage:

TA21XXHD/FP20XXLD has to be stored in a cool and dry place. At maximum room temperature of 25°C, the storage life is 18 months. Storage at higher temperatures may reduce the quality of masterbatch.

#### Toxicity/permission:

TA21XXHD/FP20XXLD is not poisonous. According to the US-FDA and BgVV, the max dosage level is 10% for food touched application.

Grade Name	TA2120HD	TA2121HD	TA2127HD	TA2142HD	FP2010LD	FP2011LD
Standard pipe	✓			✓	✓	✓
Using brass fitting		✓	✓	✓		
High concentration catalyst			✓	✓	✓	✓
Contain long-term stabilizing	✓	✓	✓	✓	✓	✓
Approved sanitary properties	✓	✓	✓	✓	✓	✓

The technical service department of SZCONSTAB will be pleased to answer specific customer enquiries on selecting the best product combination.

# PA0835HD

## Processing Aid Concentrate

**Description:** PA0835HD masterbatch is made of HDPE, fluorin-elastomer and antioxidants, it is a highly effective processing aid for HDPE and MDPE extrusion.

**Appearance:** Colorless, translucence

**Physical:** Pellets

**Applications:** Even without increasing the screw speed the output can be increased remarkably. Meanwhile, the pressure build-up in the barrel is reduced. The result is a tremendous increase of the screw lifetime. PA0835HD can effectively prevent the build-up of deposits in the die which are caused by high pigment concentration, flame retardant, blowing agent and other additives. The mixture of different density polyethylene, the suitable dose of PA0835HD will get a remarkably improved processing performance and surface quality.

**Addition levels:** For uncross-linked polyethylene, 1.0-3.0% PA0835HD has to be dosed. For PEX, the following method are recommended:

- A blending of 10% PA0835HD and 90% PE has to be run for 20-30min through the machine at high speed before production.
- Starting production 0.5-2.0% PA0835HD has to be dosed. After normal production, the level of dose can be reduced gradually.

**Combinations:** PA0835HD is compatible with most plastic additives. With H.A.L.S and certain antistatic, the effectiveness of PA0835HD may be reduced.

**Combinations:** PA0835HD is supplied in 25kg PE bags.

**Storage:** The storage of PA0835HD causes no problem. It is not sensitive to ambient temperature and humidity. At maximum room temperature of 25°C the storage life is 18 months.

**Toxicity/permission:** No poison. According to the US-FDA and BgVV, the max dosage level is 10% for food touched application.

# PA0851LD

## Processing Aid Masterbatch

**Description:** PA0851LD masterbatch is made of LDPE, fluorin-elastomer and antioxidants, it is a highly effective processing aid for MDPE and LLDPE.

**Appearance:** Colorless, translucence

**Physical:** Pellets

**Applications:** Even without increasing the screw speed, the output can be increased remarkably. Meanwhile, the pressure build-up in the barrel is reduced. The result is a tremendous increase of the screw lifetime. Compared with other process aid additives, PA0851LD can effectively prevent the build-up of deposits in the die. The articles made of MDPE will get a remarkably improved surface quality by the dosage of PA0851LD. The productions of LLDPE will not occur melt fracture at high speed by dosing of PA0851LD.

**Addition levels:** Depending on the different purpose, during production 1.0%-3.0% PA0851LD has to be dosed. To ensure smooth processing, the following method are recommended:

- A blending of 10% PA0851LD and 90% PE has to be run for 20-30min through the machine at high speed before production.
- During production 1.0-2.0% PA0851LD has to be dosed. The exact amount must be determined in preliminary tests.

**Combinations:** PA0851LD is compatible with most plastic additives. With H.A.L.S and certain lubricant, the effectiveness of PA0851LD may be reduced.

**Combinations:** PA0851LD is supplied in 25kg PE bags.

**Storage:** The storage of PA0851LD causes no problem. It is not sensitive to ambient temperature and humidity. At maximum room temperature of 25°C the storage life is 18 months.

**Toxicity/permission:** No poison. According to the US-FDA and BgVV, the max dosage level is 10% for food touched application.

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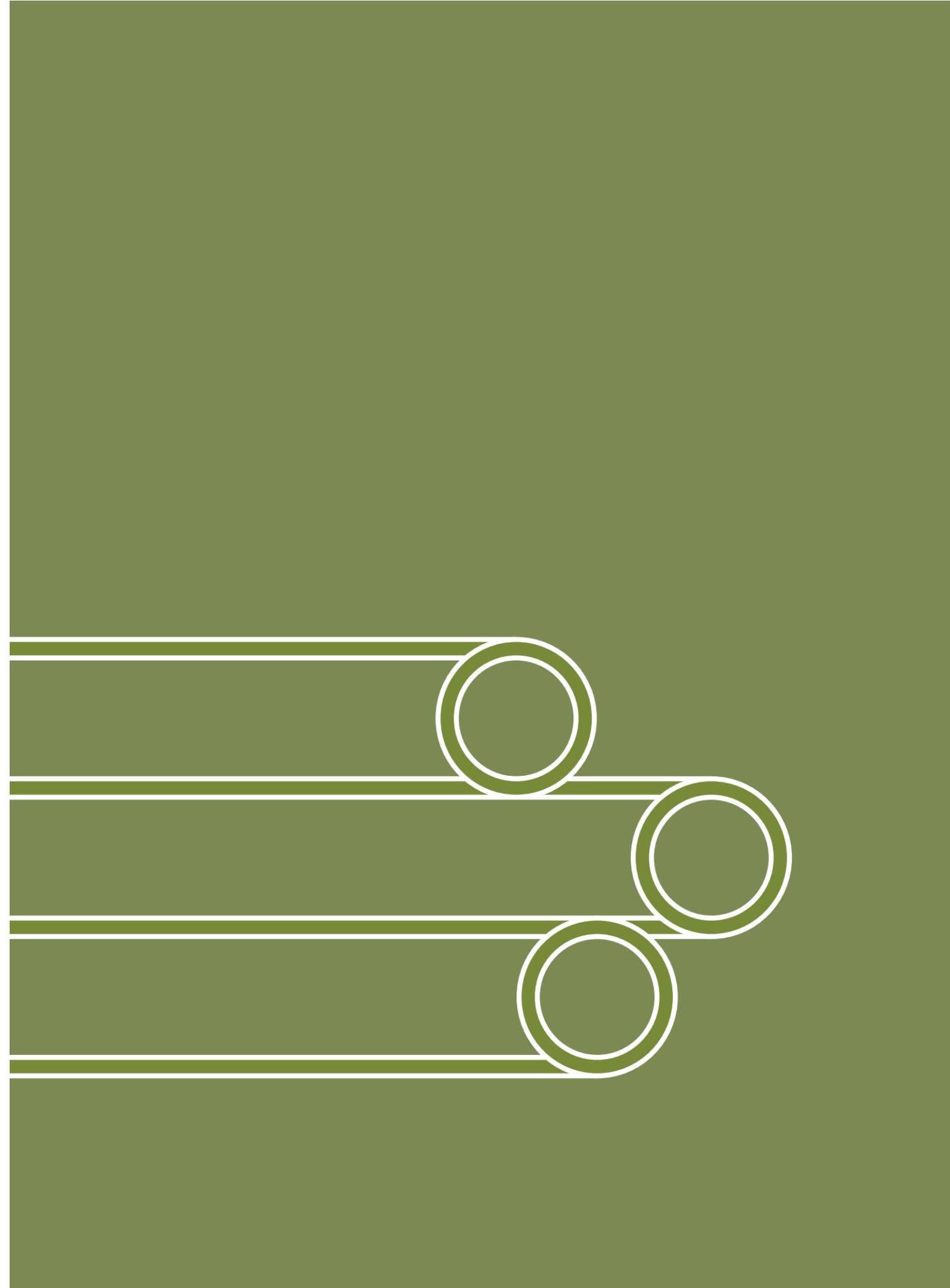
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