



LSP SOLUTION FOR RECYCLED PET
REDUCING COST IMPROVING QUALITY
MEASURED IV INCREASE IN 0.05-0.3dl/g

LSPLINE™ PET IV-INCREASE SOLUTION

LSPLINE™ is an extremely efficient alternative to a Solid State Polymerization (SSP) as there is no energy needed to cool the polymer down and then reheat it. Further, the reaction time in the melt phase is considerably faster than in the solid phase, which also contributes to the better economics of the LSPLINE™ system.

LSPLINE™ improve the quality of PET recycling material (fibre, bottle flake, film, popcorn, Low IV polymer) melt, To produce high grade PET fibre, PET packaging strap, PET pellet, PET film, improve the recycling utilization and quality of resources.

LSPLINE™ MEASURED IV INCREASE IN 0.05-0.3dl/g

With our good homogenization feature, the reactor could mix different raw materials into homogeneous melt.



PET Polyester Popcorn



PET Bottle Flake



PET Packing Strap



PET Film



Low IV PET Pellets

LSPLINE™ BENIFITS



CAGE REACTOR

1. INNOVATION STRUCTURE

The innovative structural design of the reactor, increases the area of the polymerisation, improves the fluidity of PET melt, makes the reaction time shorter.



SMARTCTRL

2. SMART CONTROL

With our new smart control system, operations and real-time monitoring is more convenient than ever before, to predict maintenance and improve production efficiency.

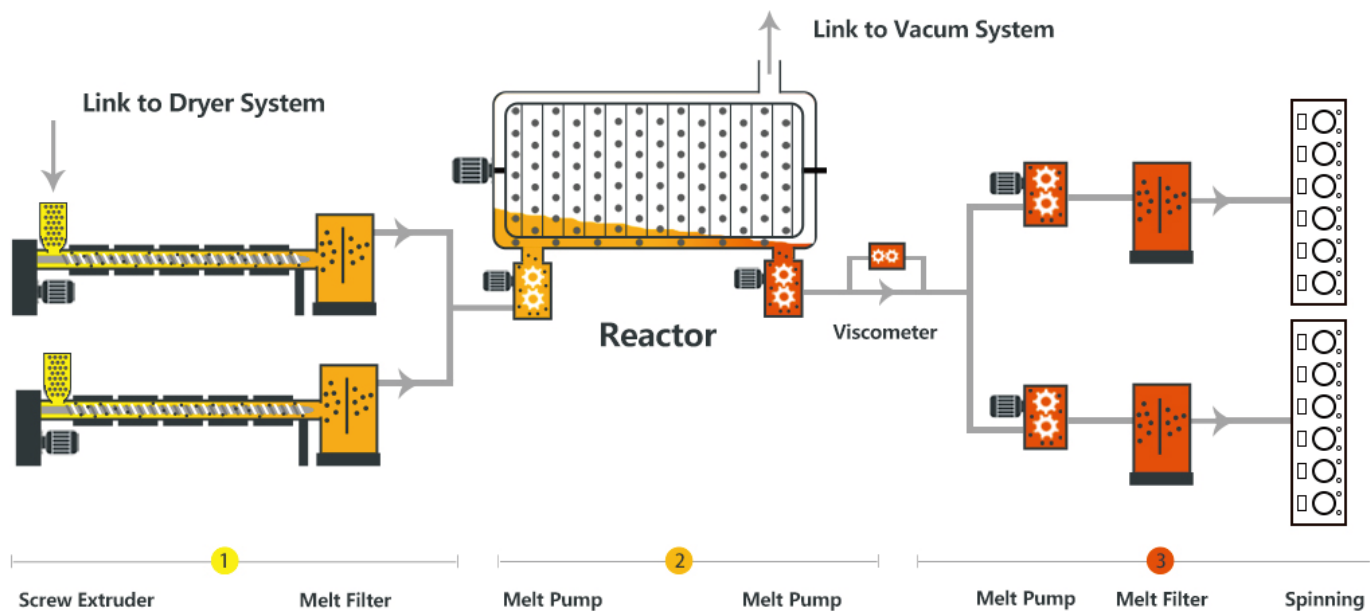


ENERGY SAVER

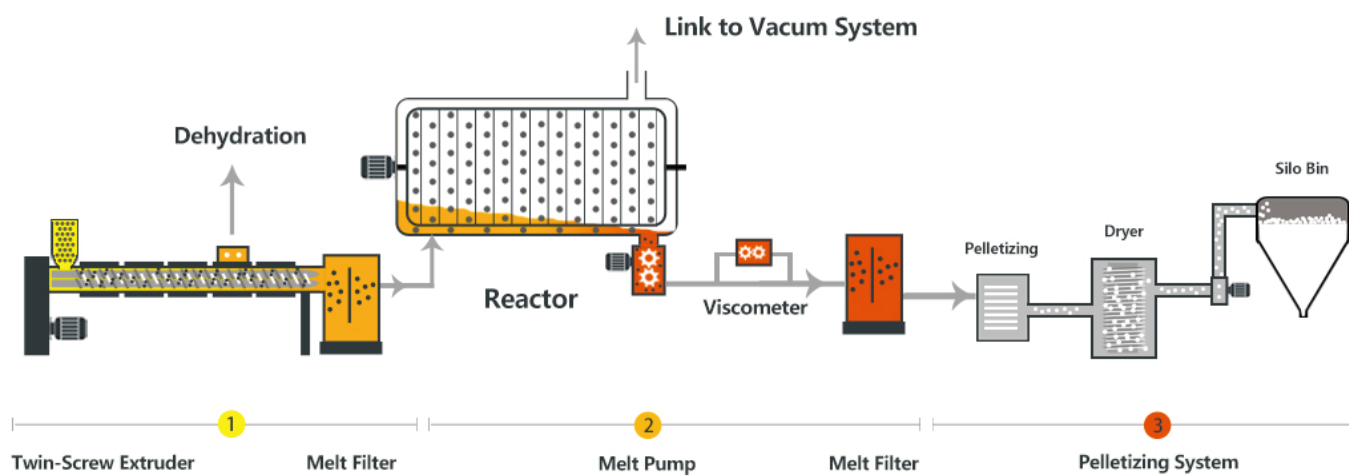
3. HIGH ENERGY EFFICIENCY

Frequency conversion equipments are used to automatically adjust operation frequency. The multiple level temperature control system minimizes the required heating energy consumption and reduces the operation cost of the whole system.

LSPLINE™ SPINNING PROCESS



LSPLINE™ PELLETIZING PROCESS



LSPLINE™ PRINCIPLE

●Homogenization

Because the source of recycled material is complex, the components are difficult to guarantee, which shows that the fluctuations of melt in production process. In order to stabilize the IV, the reactor runs at a certain speed, so that the internal melt is fully mixed.

●Decontamination

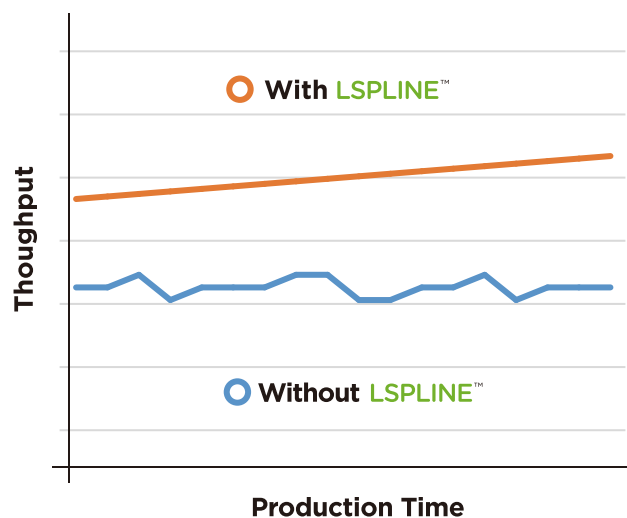
Because PET re-polymerization is carried out in a high vacuum state, the low molecular substance contained in the raw material and the auxiliaries will be vaporized in high temperature.

●Molecular Chain Growth

There are still a large number of hydroxyl and carboxyl molecules in the raw materials, and the catalytic system is still effective. the polymerization still occur under certain temperature and vacuum state, The molecular chain and IV will increase.

HIGHER THROUGHPUT

Through the buffer of our reactor, The whole production system is more controllable, increase output and avoid time lost during the process of replacing filters.



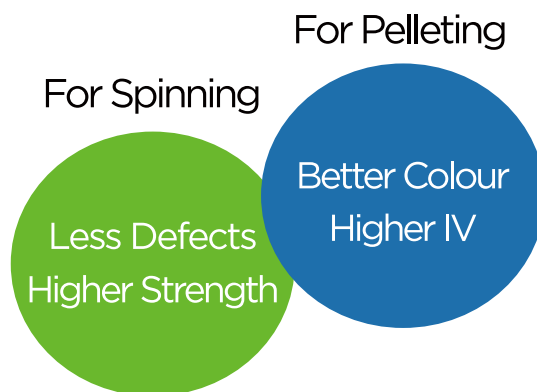
LSPLINE™ HIGH QUALITY OUTPUTS

●High Purity

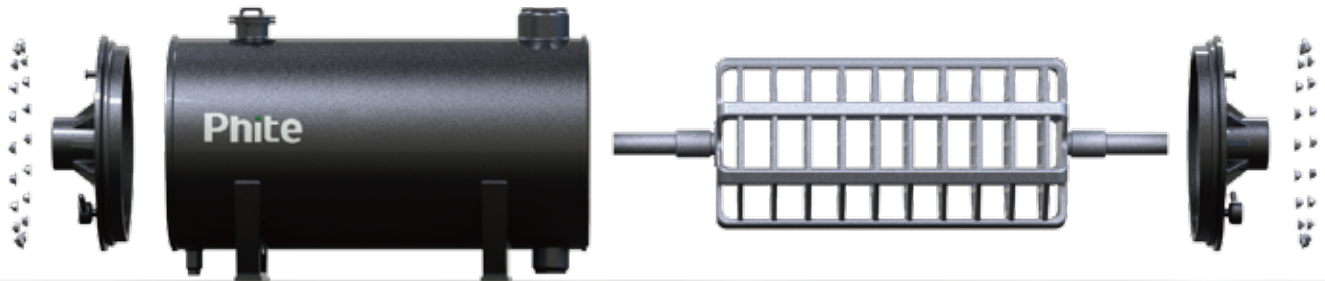
After multiple filtration and homogenization, the recycled polyester melt has higher purity and IV, and color of the end product are more uniform.

●High Strength

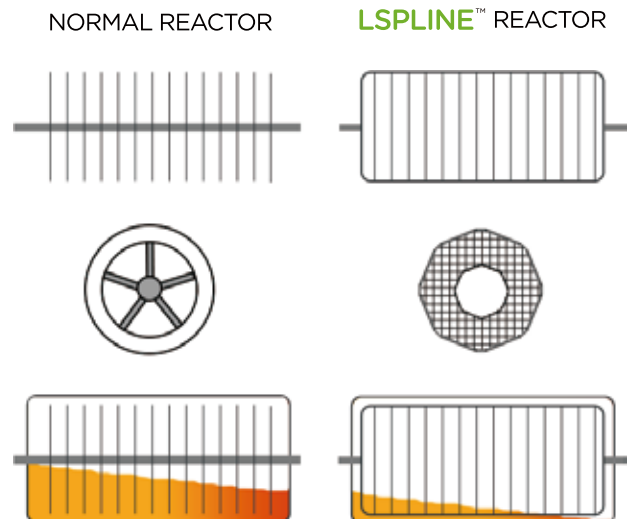
Under the high temperature and vacuum polymerization reaction, the molecular chains and IV are continuously increased, and the strength of the produced polyester product is also better.



LSPLINE™ INNOVATION



- Non-shaft design: The unique shaftless design makes the melt filming reaction smoother, avoiding the risk of material accumulation.
- Larger reaction area: The larger reaction area has better decontamination efficiency, better IV-increase effect, and achieve higher purity after reaction.
- Shorter reaction time: Innovative mesh design allows smoother melt flow, which makes the liquid level control more stable and can be controlled at a very low level, allowing the melt reaction time to be shortened and the end product color to be better.



LSPLINE™ BELIEVE IN THE POWER OF BRANDS



Vacuum
Measurement



Pressure
Measurement



Liquid Level
Measurement



Inverter
Drive



Reducer

LSPLINE™ OUR CLIENTS

Our liquid state polymerization solution LSPLINE™ are used in more than 60 production lines globally to help companies handle more than 3,000 tons of recycled polyester daily, applied to many polyester industries. The list below are some of the classic customer:

Client Name	Capacity	Application
Yangzhou Tianfulong Technology Fibre	2×40T/D	Short Fibre
Yangzhou Tianfulong Technology Fibre	100T/D	PET Pellets
Ningbo Dafa Chemical Fibre	2×60T/D	Three Dimensional Hollow Fibre
Ningbo Dafa Chemical Fibre	60T/D	Two Dimensional Hollow Fibre
Fujian Baichuan Technology	60T/D	POY
Fujian Baichuan Technology	20T/D	Zipper Wire
Jiangyin Shengfa Fibre	60T/D	Coloured Short Fibre
Jiangyin Jiahao Special Fibre	50T/D	Short Fibre
Jiangyin Haiyang Fibre	50T/D	Short Fibre
Jiangsu Shengyu Fibre	50T/D	Short Fibre
Jiangsu Shengyu Fibre	80T/D	Short Fibre
Yangzhou Ruiyue Fibre	40T/D	Three Dimensional Hollow Fibre
Laiwu Xinyuan Fibre	40T/D	Short Fibre
Laiwu Fuxin Fibre Products	40T/D	Short Fibre
Laiwu Jinxin Fibre	40T/D	Short Fibre
Hebei Juyue Fibre	50T/D	Short Fibre
Heilongjiang Huajin Fibre	30T/D	FDY



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