祺源股份有限公司
CHEER YOUNG CO., LTD.

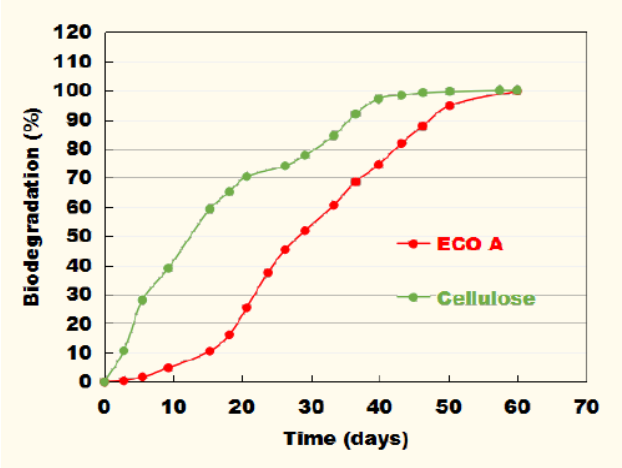
Biodegradable material

【Definition】

Traditional plastic materials cannot be decomposed by microorganisms, and biodegradable materials (also known as bioplastics, degradable plastics) will not decompose under normal use. However, the used biodegradable plastic can be decomposed into carbon dioxide and water under the action of humidity, temperature and microorganisms in a natural burial or composting environment. It has great protection value for the earth's ecological environment.

【Standard】

International standards for biodegradability should comply with three principles:1. It should be completely disintegrated to the naked eye2. It should be completely decomposed within 180 days3. It should be non-toxic and not affect microorganisms and plants



Biodegradation rate needs to reach 100% within 180 days

【Plastic ban policy】

In recent years, countries around the world have formulated relevant laws and regulations to prohibit and restrict the use of disposable products that are difficult to recycle and pollute, while supporting the application of biodegradable materials. For example, the European Union clearly stipulates the recycling and composting of garbage in its packaging regulations, and plans to ban 10 types of disposable plastic products in 2021. France also stipulates that from 2020, disposable tableware such as dishes, cups and forks must be made of bio-based materials.

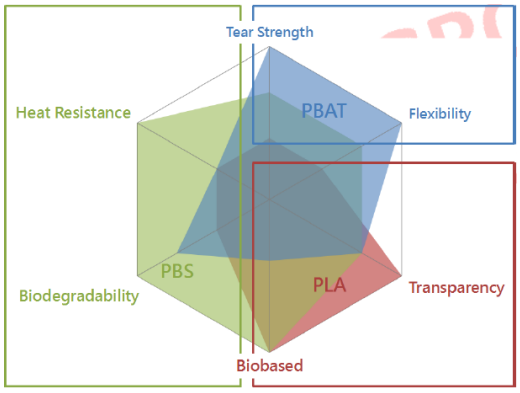
【Certification】

American BPI Certificate
EU DIN Certco Certificate
Japan JPBA Certificate

【Physical properties】

There are many kinds of biodegradable materials. The common PLA, PBAT, and PBS are good at the performance of plastic properties. The comparison is as follows:

Biodegradability: PBS> PBAT> PLA
Heat resistance: PBS> PLA> PBAT
Tear strength: PBAT> PBS> PLA
Flexural strength: PBAT> PBS> PLA
Transparency: PLA> PBS> PBAT



【Application】

The biodegradable plastic has a very wide range of molding and application, such as extrusion, film blowing, injection, bottle blowing, compression, threading...

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Biodegradable material - PBAT

【PBAT】Polybutyleneadipate-co-terephthalate

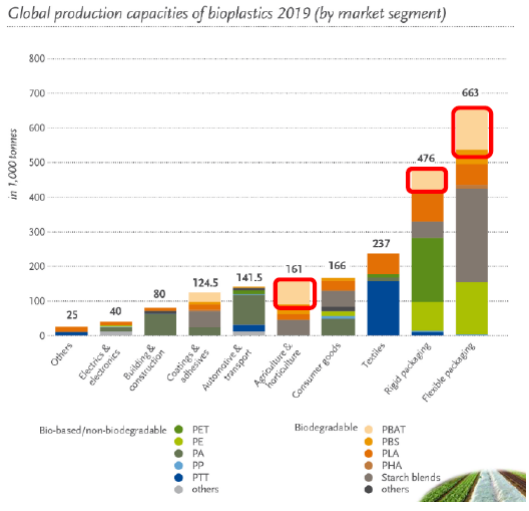
- PBAT is a thermoplastic biodegradable plastic. It is a copolymer of butylene adipate and butylene terephthalate. It has both the characteristics of PBA and PBT. It has good ductility and elongation at break, as well as Good heat resistance and impact performance.
- PBAT benefits from the benzene ring structure. The tear strength of PBAT is 120% of that of polyethylene, and the impact strength of PBAT is 130% of that of polyethylene. The above properties are necessary conditions for the production of high-performance membranes.
- PBAT has many attractive features, similar to HDPE. It can be used for similar applications in food packaging and agricultural films. In addition, it is completely biodegradable and can be processed on conventional blown film equipment used for polyethylene.

【PBAT】Grade

- PBAT ECO-A05 Extrusion grade MI: 5 Temperature resistance: 46℃
- PBAT ECO-A20 Injection grade MI: 20 Temperature resistance: 46℃

【PBAT】Application

PBAT decomposable plastic is mainly used in plastic bags/packaging materials/mulch



Biodegradable material - PBS

【PBS】Polybutylene-Succinate

- PBS (polybutylene succinate) is formed by condensation polymerization of succinic acid and butylene glycol. The resin is milky white, odorless and tasteless, and is easily decomposed and metabolized by various microorganisms in nature or enzymes in animals and plants. It is decomposed into carbon dioxide and water, which is a typical completely biodegradable polymer material.
- PBS has good heat resistance, heat distortion temperature and product use temperature is around or exceed 100℃
- The source of PBS's synthetic raw materials can be either petroleum resources or fermentation of biological resources. PBS is a leader in biodegradable plastic materials

【PBS】Grade

- PBS ECO-B05 Blow molding/extrusion grade MI: 5 Temperature resistance: 95℃
- PBS ECO-B20 Injection/extrusion grade MI: 20 Temperature resistance: 95℃

【PBS】Application

PBS can be used as garbage bags, packaging bags, cosmetic bottles, various plastic cards, baby diapers, agricultural materials, etc. Or nets, membranes, etc. for civil greening. PBS can also be used in the fields of tableware, medicine bottles, disposable medical supplies, agricultural films, pesticide and fertilizer slow-release materials, and biomedical polymer materials.

Biodegradable plastic produced in Changchun.