

Koyee®

The new generation
***single-layer eco-friendly
paper straws***

Nanjing High Efficiency New Material Technology Co., Ltd.



About us

Nanjing High Efficiency New Material Technology Co., Ltd. is a high-tech company committed to the research and development, production, sales and service of biodegradable paper straws. Led by technology and process experts who have been in the straw equipment industry for nearly 30 years.

At present, the company has a number of invention patents in the field of single-layer environmentally friendly paper straw equipment, process and product, and has synchronously applied for international patents.

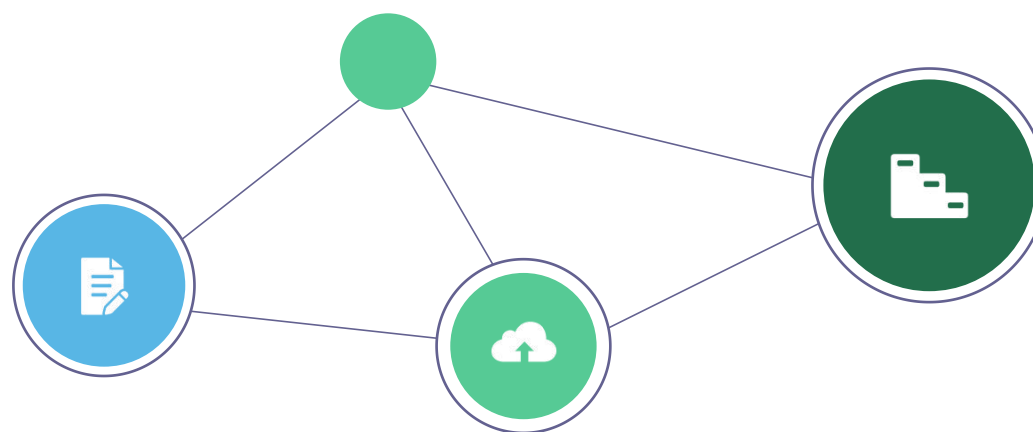
The company pays attention to the safe and hygienic production environment, always adheres to the development concept of "healthier without plastic" and "green production", takes "environmental protection plastic ban" as the mission, and is committed to provide more environmentally friendly products that can be degraded naturally, so as to create a more environmentally friendly, healthier and better life for everyone.



Core advantage

Exclusive technology

Process and equipment are independent research and development, only for self-produced use. Can realize full automation, high efficiency, health, energy saving.



Material research and development

In order to deeply implement the concept of safety and environmental protection, we jointly develop environmental protection materials with raw material manufacturers to ensure the quality and experience of paper straws.

Digital intelligent workshop

China takes the lead in creating a fully digital intelligent workshop to fully understand the production status.

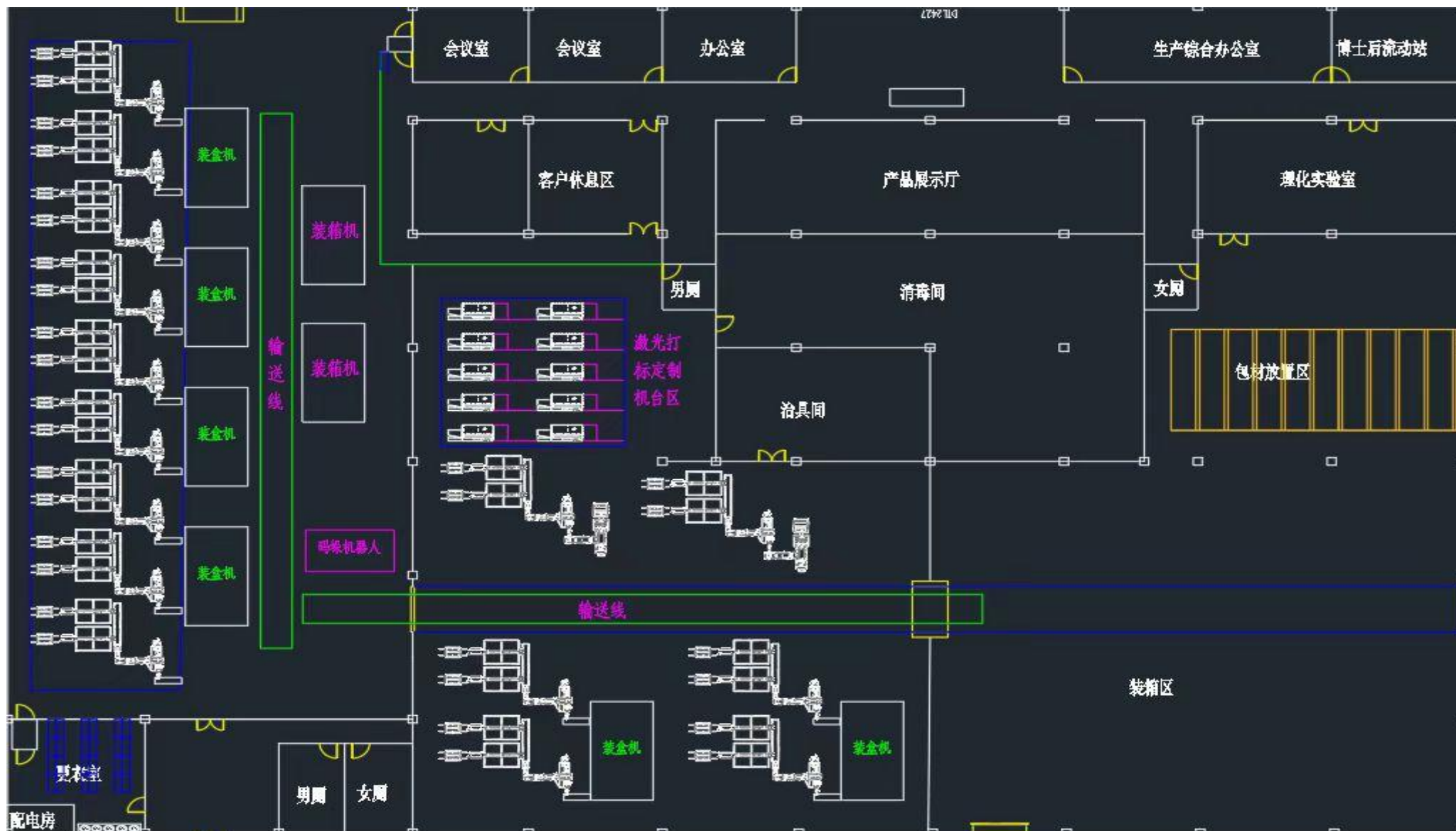
Introduction to modern factory

High Efficiency factory is located in Gaochun District, Nanjing City, covering an area of 45 acres with a building area of more than 12,000 square meters. It has a garden-style factory environment and a fully enclosed dust-free workshop, creating a unique transparent and enclosed industrial sightseeing channel.

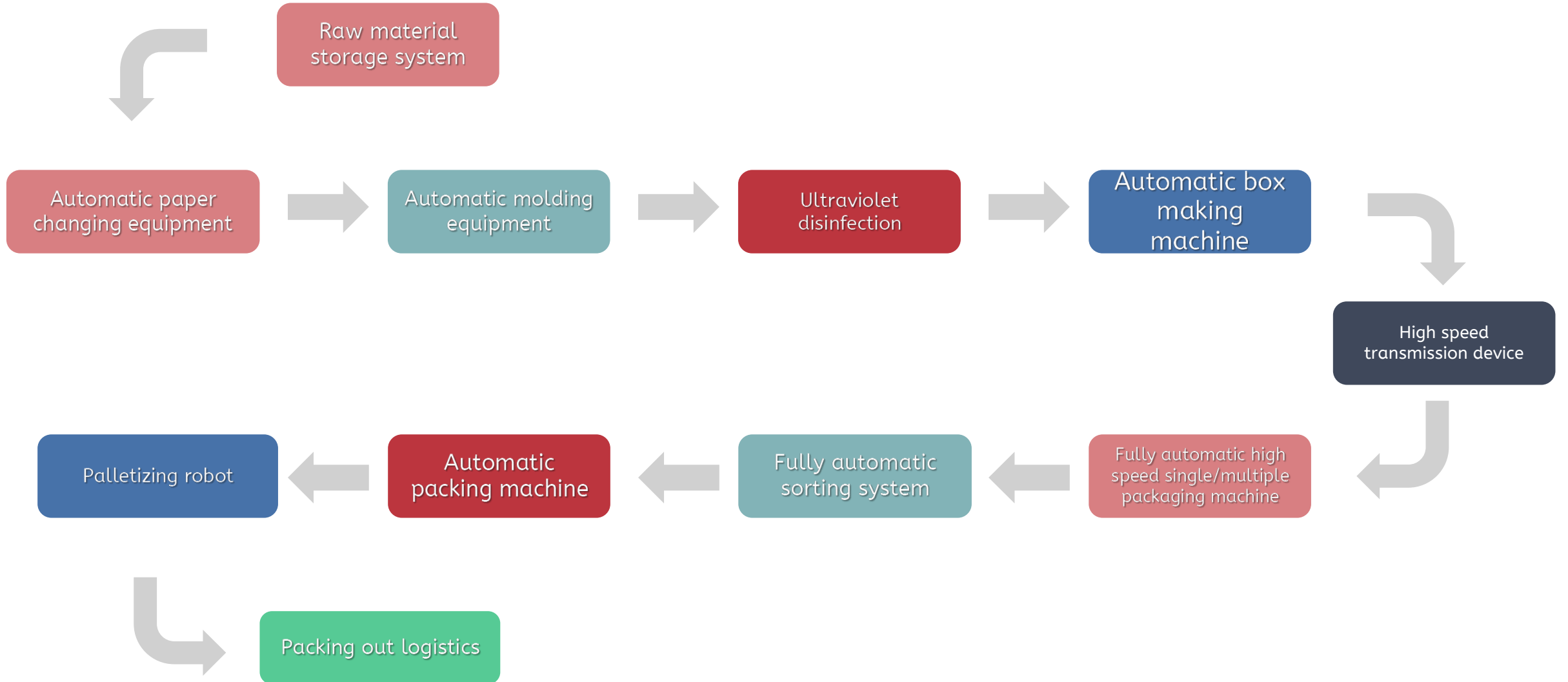
The factory specializes in the production of a new generation of naturally degradable single-layer environmentally friendly paper straws, which can achieve fully automatic and efficient production to meet the production needs of large numbers of orders.



Production shop layout(blueprint)



Automatic equipment



Workshop and sightseeing passage

Establish the industry benchmarking production process, to ensure the quality and hygiene of straws are fully guaranteed, open a unique transparent industrial tourism channel, all visiting customers can fully grasp the workshop production overview, clean, orderly, efficient automated production workshop, customers can see the entire production process of their ordered products!



Factory picture display



Product introduction



With the implementation of the plastic ban, plastic straws have exited from the stage of history, and the multi-layer paper straws and PLA straws that have been replaced have imperfect drawbacks. Therefore, the original intention of the founding team was to launch a straw with experience and environmental protection purpose.

After 2 years of research and development and improvement, HE team has launched a new generation of single-layer non-plastic glue-free paper straw. Relying on industry-leading technology, it replaces the existing traditional multi-layer paper straw in terms of process, user experience, product quality and production efficiency. In terms of cost, it is significantly better than the biodegradable PLA straw which needs professional composting. Our product is an epoch-making new product in the straw industry.

Product information



Product Name: Natural degradable single-layer environmentally friendly paper straw

Product Category: Disposable drinking straw which can be degraded naturally

Material: FSC certified original wood pulp paper

Product specification: 6mm*197mm*0.7g

Production License number: Su XK 16-205-00381

Implementation standard: Q/320118NJGY001 2022

Instructions: High temperature shall not exceed 85°C

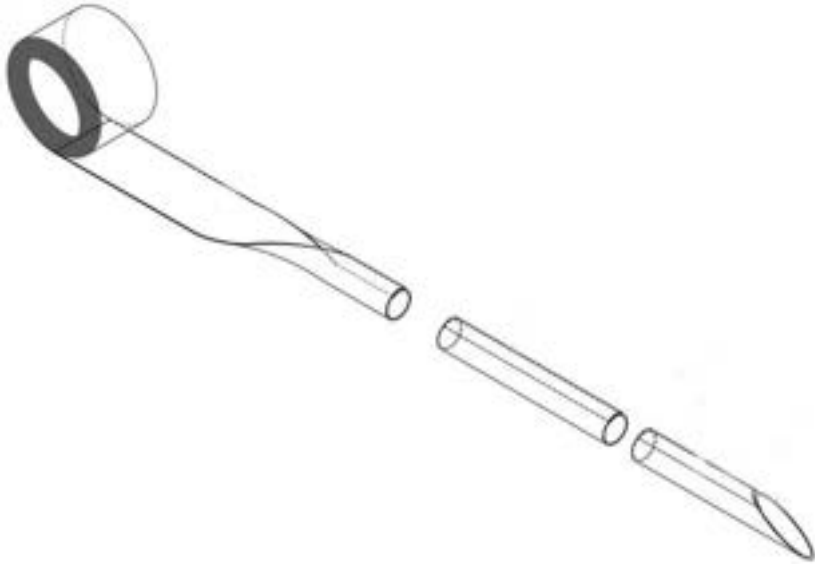
Shelf life: 24 months

Product specification

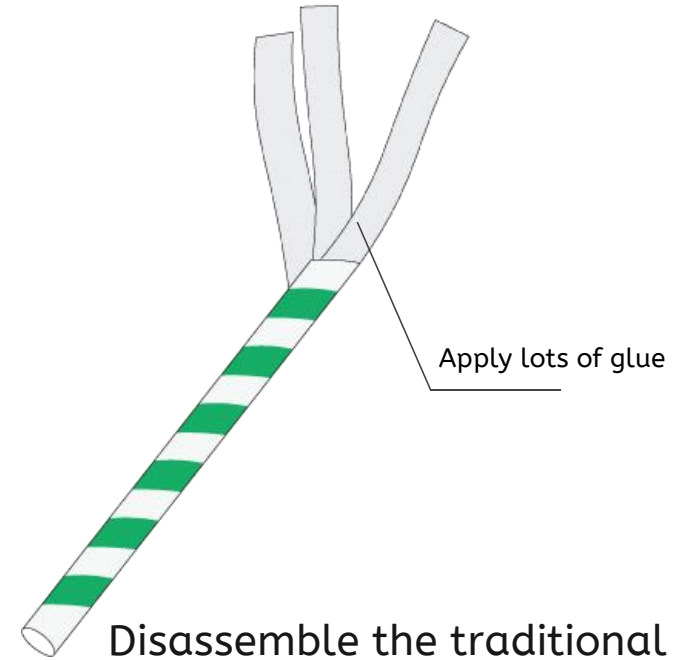


Product name	Specification	Color	Packing specification
Single-layer paper straw	φ6*197mm	Primary color	250 PCS/pack,20 bags/case
Single-layer paper straw	φ7*197mm	Primary color	250 PCS/pack,20 bags/case
Single-layer paper straw	φ8*197mm	Primary color	250 PCS/pack,20 bags/case
Single-layer paper straw	φ10*197mm	Primary color	100 PCS/pack,50 bags/case
Single-layer paper straw	φ12*197mm	Primary color	100 PCS/pack,50 bags/case

Product process comparison



HE paper straw process disassembly



Disassemble the traditional multilayer paper straw process

Compared with the traditional multi-layer paper straw, the new generation of single-layer non-plastic paper straw's structure is simple, the material usage is only 50%-70% of the multi-layer paper straw, the production process does not use glue, use heat lapping way, no odor and environmental friendly. In addition, after a large number of experimental data confirmed that soaking for 24 hours cracking will not appear which might affect the using.

Comparison of product advantages

Product name	Ordinary multilayer tape straw	Multilayer non-adhesive paper straw	Pure PLA straw	PLA coated paper straw	Single layer waterproof paper straw
material	Brown paper/white paper	Brown paper/white paper	Vegetable starch	Paper /PLA	Brown paper/white paper
Degradable or not	Partially degradable (adhesive glue is not degradable)	Total degradation	Have specific requirements	Total degradation	Total degradation
High temperature resistance	High temperature intolerance	High temperature resistance (high temperature resistance 85°C)	60~85°C	Temperature resistance 100°C	Temperature resistance 100°C
Resistance to soaking	Intolerant to soaking (easy to soften and degumming, hot drink softening and degumming faster)	More common adhesive paper straw bubble resistance	Soaking resistance	Soaking resistance	Soaking resistance
security	Unsafe (most bonding glues do not comply with food safety regulations)	safe	safe	safe	safe
Customer experience degree	Poor (smelly, not bitten, easy to rot)	General (no bite, no experience)	good	good	good
price	moderate	high	high	Slightly higher than a multilayer coated paper straw	It is obviously better than PLA degradable straw
recyclability	Paper needs to be stripped before use, processing is difficult, high cost	Standardize factory products, can be recycled directly processing	It cannot be recycled for the time being	The paper can be used only after the PLA coating is removed, which is difficult to handle and cost is high	Can be recycled directly back paddle treatment

Application scenario



Conventional drink



Hot drink



Ice drink

kyee new generation of single-layer non-glue eco-friendly paper straw has excellent temperature resistance and soaking resistance, suitable for all kinds of hot drinks, cold drinks, calcium carbonate drinks, etc. Temperature resistance up to 85°C, 24 hours soaking also does not crack or fall apart, more elastic than the traditional multi-layer paper straw.

Application scenario



Preferred coffee

Urban fashion years ago group



Family routine

Whether it is for children or the elderly, it will not hurt their delicate mouth



Picnic camping

Easy to carry, healthy and safe, and not afraid of being thrown away



Tourist attraction

Not afraid of being discarded, causing environmental pressure on the scenic area, return to green mountains and green water

Production license



Authoritative qualification certification (enterprise standard)



南京高益新材料科技有限公司企业标准

Q/320118 NJSY 001-2022

单层环保饮用纸吸管

One-layer environmental protection drinking paper straw

2022-03-18 发布

南京高益新材料科技有限公司



单层环保饮用纸吸管

1 范围

本标准规定了单层环保饮用纸吸管(以下简称吸管)的术语和定义、原材料、要求、试验方法、检验规则、标志、包装、运输、贮存。

本标准适用于本公司生产的以天然植物纤维为原料,经提、压榨、成型、精制制成的用于餐饮食品饮用的纸吸管。

2 规范性引用文件

下列文件中的内容通过文中的规范性引用而构成本文件必不可少的条款。其中,注日期的引用文件,仅该日期对应的版本适用于本文件;不注日期的引用文件,其最新版本(包括所有的修改单)适用于本文件。

- GB/T 2916-2008 包装储运图示标志
- GB/T 28001-2012 计数抽样检验程序第1部分:按接收质量限(AQL)检索的逐批检验抽样计划
- GB 4806.1-2016 食品接触材料及制品通用安全要求
- GB 4806.8-2016 食品接触用纸和纸制品
- GB/T 19134-2008 一般货物运输包装通用条件
- GB2762-2014 食品安全国家标准 食品中污染物限量
- GB2763-2014 食品安全国家标准 食品中农药最大残留限量

3 术语和定义

3.1

单层环保饮用纸吸管 one-layer environmental protection drinking paper straw

由天然植物纤维经压榨、压榨、成型、精制制成的用于餐饮食品饮用的纸吸管。

3.2

纸类介质 off paper media

包括吸管中的纸层,除纸一切非纸材料。

4 原材料

4.1 原材料

产品所用的纸类介质应符合 GB 4806.1-2016、GB 4806.8-2016 的规定和食品安全国家标准的要求。

4.2 辅料(添加剂)

无。

4.3 其他



生产原料的合格证明或检测报告和生产记录应完整,并保存不得少于一年。

5 产品规格

吸管按长度 L (mm) 和管径(内径) Φ (mm) 分为不同规格,产品规格应标注在产品包装上。

6 要求

6.1 感官

吸管应颜色正常,无霉斑、霉点、污损、毛刺、杂质、异味,无异味异味,无影响使用的缺陷。

吸管表面应色泽均匀,无污损、油污等,若有印刷图案,应清晰。

100支吸管中感官合格吸管数不少于99支。

6.2 规格尺寸偏差

6.2.1 长度偏差

吸管的长度偏差应为 $\leq \pm 1.5\%$ 。

6.2.2 内径偏差

吸管的内径偏差应为 $\leq \pm 5\%$ 。

6.2.3 壁厚均匀度

同规格的非排他性的同一批产品的最大壁厚和最小壁厚之比 ≤ 1.2 。

6.2.4 吸管弯曲度

吸管弯曲度 $\leq 1.5\%$ 。

6.3 质量偏差

6.3.1 单支质量偏差

单支吸管的质量偏差应为 $\leq \pm 2\%$ 。

6.3.2 100支总质量偏差

100支吸管的总质量偏差应为 $\leq \pm 2\%$ 。

6.3.3 单支吸管净重占质量比重

吸管净重占吸管总质量比重不超过10%。

6.4 物理化学

内径小于15mm的吸管浸泡电压不超过3mm。

内径大于15mm的吸管浸泡电压不超过4mm。

6.5 耐水性

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Authoritative qualification certification (enterprise standard)



室温下浸泡 8 小时后吸管内壁不开裂、不脱落。
在 80℃ 水中自然放置 4 小时后吸管内壁不开裂、不脱落。

6.4 安全卫生指标

吸管的卫生性能要求应符合 GB 4806.9-2016 中的要求。

6.7 可回收性

生产原料与使用后的吸管可以满足 80% 以上回收处理要求。

6.8 环保性

生产原料与使用后的吸管可以满足 100% 全生物降解处理要求。

吸管实现挥发有机化合物 (VOC) 释放量于 0.5, 符合国家标准 GB 30900。

7 检验方法

7.1 感官

任意抽取同一批产品中的 100 只吸管, 在自然光线下, 目测吸管的外观和颜色是否符合标准要求, 室温下闻吸管是否有异味。

7.2 规格尺寸偏差

7.2.1 长度偏差

用精度分度为 1mm 的钢直尺, 测量吸管一端到另一端的长度。
按下式计算长度偏差。

$$\Delta L = \frac{L - L_0}{L_0} \times 100\%$$

式中:

ΔL ——长度偏差, 用百分数 (%) 表示;
 L ——实测长度, 单位为毫米 (mm);
 L_0 ——产品标准长度, 单位为毫米 (mm)。

7.2.2 内径偏差

用游标卡尺测量吸管一端, 测量吸管内径, 吸管的横截面见图 1。



单位为毫米

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图 1 吸管横截面示意图

按下式计算内径偏差。

$$\Delta D = \frac{D - D_0}{D_0} \times 100\%$$

式中:

ΔD ——内径偏差, 用百分数 (%) 表示;
 D ——实测内径, 单位为毫米 (mm);
 D_0 ——产品标准内径, 单位为毫米 (mm)。

7.2.3 壁厚均匀度

用精度为 0.05mm 的游标卡尺测量同一横截面上测量最大壁厚和最小壁厚。

7.2.4 吸管弯曲度

把吸管自然的平放在平整试验物上, 用直尺测量吸管长度 L , 吸管弯曲度测量见图 2, 并按如下式计算弯曲度。



单位为毫米

图 2 吸管弯曲度测量示意图

$$\Delta R = \frac{H}{L} \times 100\%$$

式中:

ΔR ——吸管弯曲度, 用百分数 (%) 表示;
 H ——弦高, 单位为毫米 (mm);
 L ——实测吸管长度, 单位为毫米 (mm)。

7.3 质量偏差

7.3.1 单只质量偏差

随机抽取 10 支吸管, 用精度不低于 0.01g 的天平称量每支吸管质量。
按下式计算质量偏差。

$$\Delta G_1 = \frac{G_1 - G_0}{G_0} \times 100\%$$

式中:

ΔG_1 ——单只吸管质量偏差, 用百分数 (%) 表示;
 G_1 ——实测单只吸管质量, 单位为克 (g)。

4



G_0 ——产品标准单只吸管质量, 单位为克 (g)。

7.3.2 100 支质量偏差

随机抽取同一批次的吸管 200 支, 分成 10 组, 每组 20 支, 用精度不低于 0.01g 的天平称量每组 (100 支吸管) 的质量。

按下式计算质量偏差。

$$\Delta G = \frac{G - G_0}{G_0} \times 100\%$$

式中:

ΔG ——100 支吸管质量偏差, 用百分数 (%) 表示;
 G ——实测 100 支吸管质量, 单位为克 (g);
 G_0 ——产品标准 100 支吸管质量, 单位为克 (g)。

7.3.3 单支吸管材料外合剂质量占比

按照吸管材料外合剂含量, 按下式计算单只吸管材料外合剂质量占比。

$$\Delta M = \frac{M + E + W}{G_1} \times 10^{-4} \times 100\%$$

式中:

ΔM ——单只吸管材料外合剂质量占比, 用百分数 (%) 表示;
 M ——原料外合剂含量, 单位为克每平方厘米 (g/cm²);
 E ——壁厚厚度, 单位为毫米 (mm);
 W ——吸管宽度, 单位为毫米 (mm);
 G_1 ——单只吸管实测质量, 单位为克 (g)。

7.4 规格偏差

用精度不低于 0.05mm 的游标卡尺测量吸管的规格偏差。

7.5 耐水性

将吸管放入沸水中, 浸泡 12 小时, 检查吸管外观和结构。
将吸管放入 80℃ 水中, 自然放置 4 小时, 检查吸管外观和结构。

7.6 安全卫生指标

符合 GB 4806.9-2016《食品国家标准 食品接触用塑料材料及其制品》要求。

7.7 可回收性

由检测机构提供检测报告满足回收处理条件的验证报告。

7.8 环保性

由机构和第三方检测机构提供检测报告满足回收处理条件的验证报告。

5

Authoritative qualification certification (enterprise standard)



8 检验规则

8.1 概述

产品以此为标准进行验收，以同一原料、同一工艺连续生产的同一规格的产品为一批，每批不得超过1000万支。

8.2 检验分类

8.2.1 出厂检验

- 出厂检验项目包括“第6章”、“8.1.2.3”、“8.2”的内容。
- 每批产品应经质量检验部门检验合格，并取得合格证后方可出厂。

8.2.2 型式检验

型式检验项目包括“第6章”、“8.1”、“8.2”的内容，在下列情况之一时，需要进行型式检验。

- 新产品或老产品转厂生产的试制定型鉴定。
- 正式生产后，如结构、材料、工艺有较大改变，可能影响产品性能。
- 正常生产后，对批量产品进行抽样检查，每年至少一次。
- 产品停产半年后，恢复生产时。
- 出厂检验结果与上次型式检验有较大差异时。
- 国家质量监督检验检疫机构提出进行型式检验要求时。

8.3 抽样方案

按 GB/T 2828.1 规定进行抽样检验，采用二次抽样方案，检查水平（II）为一般检查水平 II，按表 4.3.1 样品判断数判定表 1，每一单位包装件为一件样本单位。

型式检验的样品应在出厂检验合格的产品中随机抽取足够数量，抽样方案判定见表 1。

表 1 抽样方案判定表

单位为每件包装

数量	样本	样本大小	接收数	拒收数
10 ³ ~10 ⁴	第一	5	0	1
	第二	5	0	2
11 ³ ~10 ⁵	第一	8	0	2
	第二	8	0	3
10 ⁴ ~10 ⁶	第一	13	1	3
	第二	13	2	4
10 ⁵ ~10 ⁷	第一	20	2	5
	第二	20	4	7
10 ⁶ ~10 ⁸	第一	32	3	6
	第二	32	6	10
10 ⁷ ~10 ⁹	第一	50	5	9
	第二	50	12	15



120°~230°	第一	50	50	7	11
63001	第二	50	100	10	15
	第一	125	125	11	16
	第二	125	250	16	21

8.4 判定规则

若不符合项目时，应在原批中抽取双倍样品对不合格项目进行复检，复检结果为全部合格，则判定该批合格，否则判定为不合格。

9 包装、标志、贮存和运输

9.1 包装

9.1.1 包装材料

- 产品包装所使用的各种包装材料应满足卫生、环保的要求。
- 电管包装用材料应符合 GB 4886.8-2008 的规定和要求。

9.1.2 单支或成管包装

9.1.2.1 包装

对成品电管进行单支独立的包装，其包装后的电管应采取保护措施，还应保持产品在使用时的包装状态如保持原包装并密封。

9.1.2.2 包装印刷

单支包装电管可以在电管纸的背面或外包装上进行图案和文字的印刷，包装印刷的文字图案应清晰，颜色应鲜明，无套色印刷和漏印现象。

9.1.2.3 包装强度和外观

单支包装电管的包装应有申请，印刷清晰，无破损、污渍和褶皱现象。单支包装电管的包装应整洁，无毛刺、污点、色斑、异物等缺陷，抽样数量 100 支单支包装电管，抽样包装后，外观和印刷质量的不合格电管数量应 ≤ 2 支。

9.1.3 包装数量

- 任意抽取 2 支电管，管内不允许有少包（漏）现象。
- 在箱内任意抽取 1 包（盒）电管，每包中电管的数量应 ≥ 标称数量的 90%。
- 在同一批次中，出现少包（漏）现象，抽样批次不合格，包（盒）内电管数量若有不合格项目时，则抽取双倍样本量进行复检，复检结果全部合格判定该批次合格，否则判定为不合格。

9.2 标志

9.2.1 外包装

产品的外包装或盒上应有明显的标志（外的或客户特殊要求的除外），内容包括：

- 产品标准号。
- 产品名称与类型。



a) 规格尺寸：规格尺寸的表达内容应标明电管规格和电管外径的标称长度 L，表示方法为电管规格 × 长度（单位为“mm”）。

b) 举例：内径 3.5mm，外径 7.6mm，长 220mm 的电管规格表示为“规格 3.5×220”。

- 标称重量。
- 生产日期。
- 生产单位名称和地址。
- 产品包装储运标志：应符合 GB/T 191-2008 的规定。

9.2.2 内包装

产品的内包装（盒）上应有明显的标志（外的或客户特殊要求的除外），内容包括：

- 产品标准号。
- 产品名称与类型。
- 材质。
- 规格尺寸（标明内径和标称长度 L）。
- 标称重量。
- 单支包装数量（如 5 支装）。
- 生产日期。
- 生产单位名称和地址。
- 检验合格标志。
- 必要时，应标明警示语，如“小心使用电管”、“请勿在通电状态下使用本产品”或“请小心使用电管”等字样。如电管在运输过程中发生破损，在包装上应注明“请勿在通电状态下使用本产品”或“请勿在通电状态下使用本产品”等字样。

9.3 贮存

产品在贮存过程中，应防潮、干燥、通风，温度适宜的库内，严禁与有毒、有害、有腐蚀性的物品混放。

未经密封的产品，其存放保质期不超过 2 年。

9.4 运输

产品在运输过程中应符合 GB/T 9474-2008 要求。

9.5 质量承诺

在正常的储运、贮存、使用条件下，如产品在一年内出现材料质量问题或制造工艺造成缺陷，生产企业提供免费更换。

Authoritative qualification Certification (special certification)

It has obtained the "food safety and quality certification" that is the regular QS certification, the FDA certification of the United States Food and Drug Administration, the ROHS certification of the European Union strict control of heavy metals exceeding the standard, the green forest FSC certification.



Test Report

Report No: WTH2100102730X1C Date Oct 8, 2021 Page 1 of 3

Applicant: Nanjing High Efficiency New Material Technology Co., Ltd.
Address: No.69 Guangrong Road, Dongsha Street, Gaosha District, Nanjing

Sample Information:
Sample Name: Paper Straw
Sample Received Date: Sep 27, 2021
Testing Period: Sep 27, 2021 - Sep 30, 2021

Test Result: Please refer to the following pages.

Test Requested:	Conclusion
As specified by client, to determine the Extractives in the sample with reference to US FDA 21 CFR 175.300 Resinous and polymeric coatings.	PASS

FDA



Certificate of Registration

This is to certify that

Zhenjiang Dadong Pulp & Paper Co., Ltd.
镇江大东纸业股份有限公司

"has certified site" has been certified in accordance with the requirements of the Forest Stewardship Council (FSC) using the FSC® Chain of Custody standard and that Zhenjiang Dadong Pulp & Paper Co., Ltd. of

No.8 Dongfang Road, Dagang, Zhenjiang New District, Zhenjiang City, Jiangsu Province, CHINA

is hereby licensed to use the FSC Logo on and sell as FSC certified all products listed on the attached FSC product schedule as FSC Mix, FSC Recycled.

Certificate Registration Code: **SA-COC-007804**
Issue Number 2.0
Licence Code: **FSC-C162009**
Issued By: Soil Association Certification Limited
Spear House, 31 Victoria Street
Bristol, BS2 6AD
United Kingdom

Issue Date: **1 September 2020**
Valid until the Renewal Date: **31 August 2025**

Signed on behalf of Soil Association Certification: **Kevin Jones, Head of Forestry**

This certificate is based on an audit by Soil Association Certification (SAC) in accordance with the requirements of the FSC Chain of Custody Standard (COC) and the FSC Principles for the Forest Sector (PF) as approved by the FSC. The certificate is issued on the condition that the certificate holder will comply with the requirements of the FSC Chain of Custody Standard (COC) and the FSC Principles for the Forest Sector (PF) as approved by the FSC.

FSC



Shenzhen Toby Testing Co., Ltd.
Address: No.19 Lanjin 4th Road, Heping Community, Pinghuo St., Pinghuo District, Shenzhen
Tel: (86) 8756-2681389

TEST REPORT

Manufacturer: Nanjing High Efficiency New Material Technology Co., Ltd.
Address: No.69 Guangrong Road, Dongsha Street, Gaosha District, Nanjing

Sample Information:
Sample Name: Paper Straw
Trade Mark: /
Basic Model No.: /
Series Model No.: /

Applicant Company: Nanjing High Efficiency New Material Technology Co., Ltd.
Applicant Address: No.69 Guangrong Road, Dongsha Street, Gaosha District, Nanjing

Received Date: September 26, 2021
Report Date: September 30, 2021

Test Requested: As specified by customer, to determine Lead (Pb), Cadmium (Cd), Mercury (Hg), Hexavalent Chromium (Cr6+), PBBs, PBDEs, DRP, BBP, DEHP, DBP, content of the sample.

Test Item(s)	Test Method	Equipment
Lead (Pb), Cadmium (Cd)	IEC 62321-3:2013	ICP-OES
Mercury (Hg)	IEC 62321-4:2013	ICP-OES
Hexavalent Chromium (Cr6+)	IEC 62321-7-2:2017	UV-Vis
PBBs, PBDEs	IEC 62321-6:2015	GC-MS
DRP, BBP, DEHP, DBP	IEC 62321-8:2017	GC-MS
Primary Screening	IEC 62321-3:2013	XRF

Test Conclusion: To test according to the requirements of the customer, the test results of the sample shown in this report do not exceed the required limit of EU RoHS 2011/65/EU and its amendment directive (EU) 2015/863.

Edited by: *Jiangyao Liao* Approved by: *Jialong Liang*

Report No.: TBT-CHE2109002
TBT-RP-077-4.0 Page 1 of 4

ROHS



GB4806.8


测试报告

No. SHAFD1914690304 (日期: 2019/07/18) 2019.07.18

测试依据:

测试标准	结果
GB 4806.8-2016-铅生物毒性指标	合格
GB 4806.8-2016-镉生物毒性指标	合格
GB 4806.8-2016-铬(六价)生物毒性指标	合格
GB 4806.8-2016-汞生物毒性指标	合格
GB 4806.8-2016-总砷生物毒性指标	合格
GB 4806.8-2016-总铅生物毒性指标	合格
GB 4806.8-2016-总镉生物毒性指标	合格
GB 4806.8-2016-总铬(六价)生物毒性指标	合格
GB 4806.8-2016-总汞生物毒性指标	合格
GB 4806.8-2016-总砷生物毒性指标	合格

GB4806.8



SGS

Test Report No. SHAFD1914690703 Date: 24 Jul 2019 Page 4 of 10

Test Results:

Test Part Description:

Specimen No.	SGS Sample ID	Description	Material (claimed by the client)
SNV	SHA19-146907.001	White paper straw	Paper

Remarks:

- (1) mg/m² = milligram per square decimeter
- (2) mg/kg = milligram per kilogram
- (3) CF = organic Carbon
- (4) X = Not Found
- (5) MCL = Method Detection Limit
- (6) ND = Not Detected (= MCL)

German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31 with amendments, Council of Europe Resolution AP (2002), 1 and BFR recommendation: Fatness of fluorescent whitened paper and board

Test Method: With reference to EN 648: 2018.

Simulant Used	Time	Temperature	Max. Permissible Limit	Result of 001	Conclusion
3% Acetic acid (AV)	4 h(x)	23±2°C	*	Grade 5	PASS
aqueous solution					
Racified olive oil	4 h(x)	23±2°C	*	Grade 5	PASS

Notes:

- (1) * = Grade 5
- (2) City Scale Rating is based on the 5-step scale of 1 to 5, where 1 is bad and 5 is good

German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31 with amendments and BFR recommendation: General extraction colour and taste test

Test Method: With reference to DIN 10565:2004
Test media: Distilled water
No. of parallel: 5

LFGB



SGS

Test Report No. SHAFD1914691903 Date: 24 Jul 2019 Page 4 of 4

Test Results:

Test Item(s)	Limit	Unit	MDL	001
Extractable Lead	0.003	mg/kg	0.002	ND
Extractable Cadmium	0.002	mg/kg	0.002	ND
Extractable Mercury	0.002	mg/kg	0.002	ND

Conclusion: **PASS**

Council of Europe Resolution AP (2002): Perfluorinated (PFC)

Test Method: With reference to ISO 17070:2015, analysis was performed by GC-ECD and GC-MS.

Test Item(s): Perfluorinated (PFC)
Conclusion: **PASS**

Sample photo:



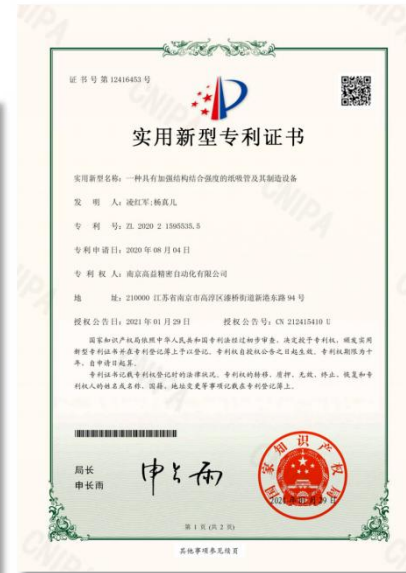
SHAFD19146918.001

SGS authenticates the photo on original report only
*** End of Report ***

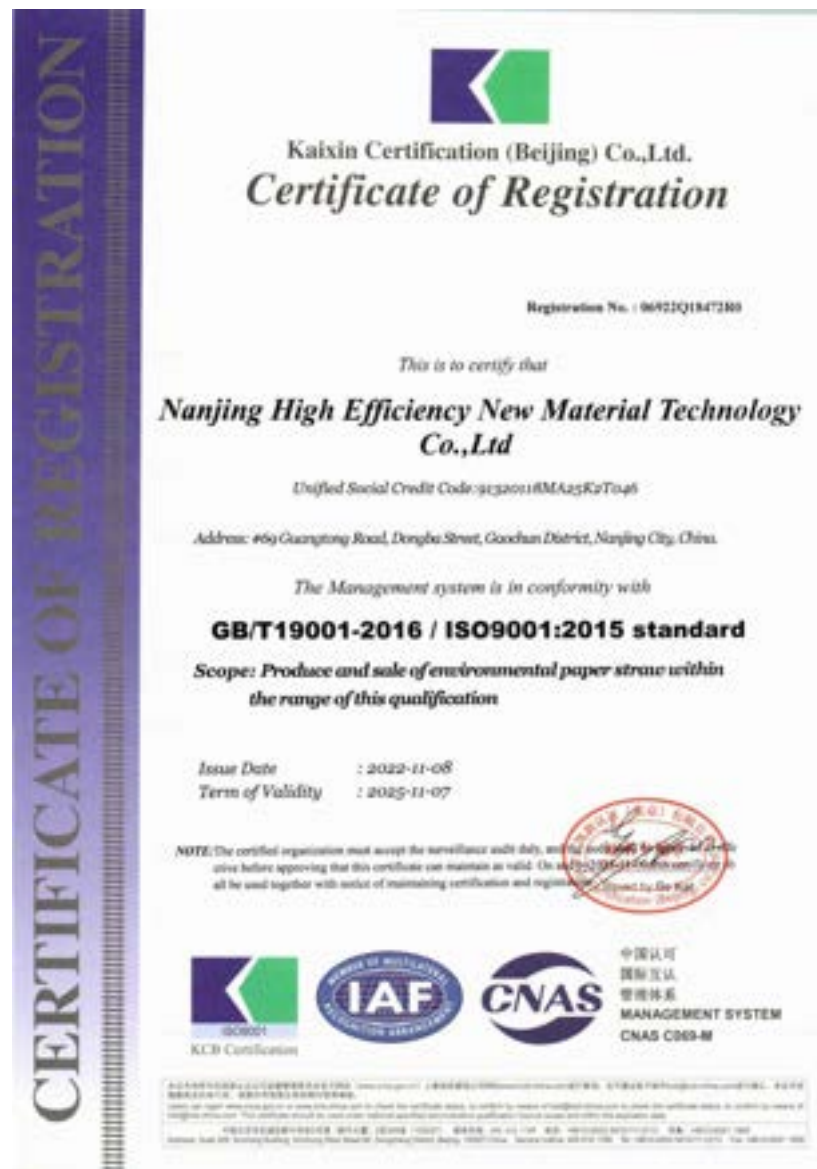
AP

Authoritative qualification certification (patent coverage)

We have more than ten invention patents and utility model patents in this new field, covering all aspects of new paper straw, paper straw production process and paper straw production equipment patent applications. At the same time also approved international PCT patent, for the industry to enter the global market and layout in advance. In 2022, patent transformation will be launched, and all patents will be upgraded to invention patents.



Authoritative Qualification Certification (ISO9000 certification)



Authoritative Qualification Certification (Quality Inspection Report 2)

南京市产品质量监督检验院
Nanjing Institute of Supervision & Testing on Product Quality
检验检测报告
Inspection and Testing Report

报告编号: NJ1202117881-000002 共3页第2页 Page No:2-2

序号	检验检测项目		技术要求	单位	检验检测结果	单项评价	
1	外观		食品用塑料应无气泡、毛刺、沟槽、裂纹、凹陷、杂质、穿孔等缺陷	—	符合要求	合格	
			表面应无油污、尘土、霉变及其他异物	—	符合要求	合格	
			焊接处应、切口平整	—	符合要求	合格	
			无异味、异味	—	符合要求	合格	
2	使用性能	尺寸偏差	外径偏差	mm	+0.1	合格	
		长度偏差	mm	+0.1	合格		
		质量偏差	100只吸管的总质量偏差≤±3%	%	-0.4	合格	
		壁厚均匀度	同一截面上最大壁厚与最小壁厚之比应≤1.3(不含连接处凸出厚度)	—	1.17	合格	
		跌落试验	自由跌落二次无破损	—	符合要求	合格	
		包装数量	每包吸管的数量≥标称数量的98%	—	符合要求	合格	
3	感官要求	颜色	色泽正常, 无异味, 霉斑或其他异物	—	符合要求	合格	
4	理化指标	铅(Pb)	≤ 3.0	mg/kg	0.2	合格	
		砷(As)	≤ 1.0	mg/kg	0.03	合格	
		甲醛	≤ 1.0	mg/dm ²	未检出(检出限: 0.02mg/dm ²)	合格	
		荧光性物质	波长254nm	阴性	—	阴性	合格
			波长365nm	阴性	—	阴性	合格
5	微生物限量	大肠菌群	不得检出	/50cm ²	未检出	合格	

南京市产品质量监督检验院
Nanjing Institute of Supervision & Testing on Product Quality
检验检测报告
Inspection and Testing Report

报告编号: NJ1202117881-000002 共3页第3页 Page No:3-3

序号	检验检测项目		技术要求	单位	检验检测结果	单项评价	
3	微生物限量	沙门氏菌	不得检出	/50cm ²	未检出	合格	
		霉菌	≤ 50	CFU/g	< 10	合格	
4	感官要求(薄膜层)	颜色	色泽正常, 无异味, 无异物等	—	符合要求	合格	
		透明度	透明试验所得视液无浑浊, 以距... 并观察感官性的劣变	—	符合要求	合格	
7	理化指标(薄膜层)	总迁移量	水, 40℃, 2h	≤ 10	mg/dm ²	8	合格
		高锰酸钾消耗量	水, 40℃, 2h	≤ 10	mg/kg	7	合格
		重金属(以Pb计)	4%乙醇(体积分数), 40℃, 2h	≤ 1	mg/kg	< 1	合格

备注: —

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Honorary certification (appraisal of scientific and technological achievements)

In July 2022, our products and related equipments were evaluated as international advanced level by the expert group through the "Scientific and Technological Achievements Evaluation" organized by the authoritative organization of the Ministry of Science and Technology of China.



Interview Notes (Jiangsu TV)



In June 2022, Jiangsu TV interviewed our company in the Green China theme activity, filmed the eco-friendliness of our products, and broadcast the interview program on Jiangsu City Channel and Jiangsu Variety Channel.



Interview Notes (Gaochun TV)



Interview Notes (CCTV cooperation)



In January 2023, passed the strictly selected CCTV national channel quality products. Enough to prove our brand strength and leading concept.

Eco – friendly paper straws shape a better life

Business contact: 0086 18951907933 Mr. Ling

Business contact: 0086 18851660573 Manager Ling

Business contact: 0086 18652009154 Sales Zhao

Address: No. 69, Guangdong Road, Dongba Street, Gaochun District, Nanjing