

Waterborne China Platform

水性平台



Innovative PU Coating Solutions for Consumer Electronics

聚氨酯涂料原材料在3C行业 的创新解决方案

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Agenda

内容



3

- 聚氨酯涂料介绍
- 创新型聚氨酯原料



Properties of Polyurethane coatings

聚氨酯涂料的特性

4

☞ **Physical and Mechanical Properties** 物理机械性能

- High Gloss, Wet Look 光泽高，光亮
- Tough but flexible 坚韧

☞ **Outdoor Durability -Aliphatic Urethanes** 户外耐久性—脂肪族聚氨酯

- Weathering 耐候性
- Environmental Etch Resistance 耐环境腐蚀
- Hydrolytic Stability 水解稳定性.

☞ **Resistance Properties** 抵抗力

- Abrasion 耐磨损
- Chemical 耐化学品
- Solvent 耐溶剂

☞ **Adjustable curing conditions and film performance**

可调节的固化条件和漆膜性能

- Fast-drying at low temperature 可室温乃至低温固化
- From flexible film to hard film 可制得从高柔韧到高硬度的漆膜



Requirements for 3C coating

3C行业，对涂料的要求

5

- **Excellent adhesion** 附着
- **Excellent appearance** 外观，特殊效果
- **High resistance vs** 高耐抗性
 - ...Scratches, self healing 划伤, 自修复效果
 - ...Chemical and solvent 化学品溶剂
 - ...Abrasion, RCA,..纸带耐磨 (CE)
 - ...Stain, fingerprint,...抗污，抗指纹
 - ...High humidity & temperature resistance
高温/湿抗水解
- **Haptics, soft/silky/rubbery touch ...** 手感/柔感涂料

装饰功能

防护功能

特殊功能

○ ○ ○

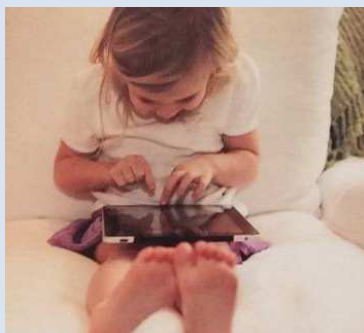


PU coating for 3C industry

聚氨酯涂料应用于消费电子行业



6



Technology技术体系：

- SB PU传统聚氨酯 (primer / top coat / mono coat)
- WB PU 水性聚氨酯(primer / top coat / mono coat)
- WB UV PU 水性光固化 (top coat / mono coat)
- Temporary functional coating (peelable) 可剥涂料



Temporary Functional Coating
临时可剥涂料

Market Trends for Consumer Electronics

消费电子品的市场趋势



6

- “Tough but exciting” – need to address the needs of all value chain players...
 - Brands/OEM **Innovation, Differentiation, Design, Fashion**
创新, 差异, 设计, 风格
Short product life cycles ⇒ frequent changes
缩短产品生命周期⇒ 频繁的变化
 - EMS/ODM* Advanced technologies to improve production **efficiency**,
Cost down and **product differentiation** and **design flexibility**
提高产品的效率, 降低成本, 差异化以及设计的灵活性
- ... in this truly global industry 在现实的全球工业领域
 - West Not just design and development anymore 西方 今后不仅仅是设计与开发
 - East Not just production (80-90% located in Asia) 东方 不仅仅是生产(80-90%在亚洲)

*:Electronics Manufacturing Service / Original Design Manufacture



What are the new requirements in 3C Industry?

除了传统的体系，还有哪些新的呢？



8



New substrates 新基材

- Composites
- Flexible/bendable
- Co-molding: plastic+metal



New decoration 新装饰

新装饰

- Anodized aluminum surface



Lighter/slimmer design 轻量化设计

轻量化设计



WB UV for efficiency and eco-friendly

水性光固化兼具高效环保



Sustainable/renewable

可再生资源/生物基产品



Peelable coating for process efficiency

可剥涂料

What we could invent for you:

创新为您：（一）

Coating for New Materials 用于新型材料的涂层

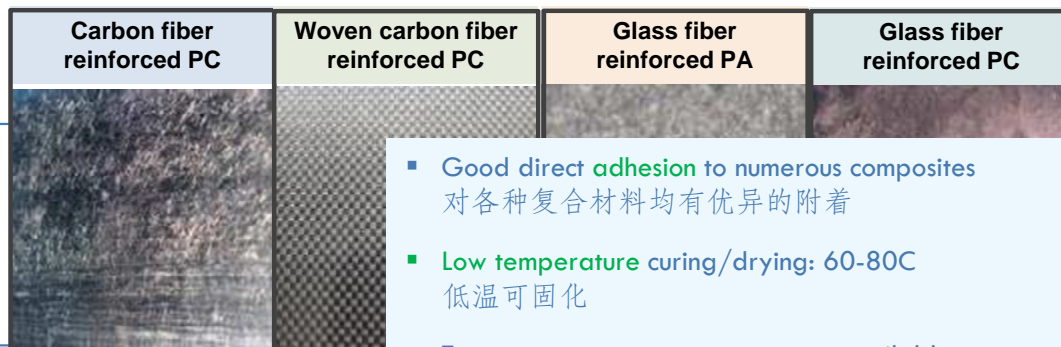


9



New substrates 新基材

- Composites
- Flexible/bendable
- Co-molding: plastic+metal



- Good direct **adhesion** to numerous composites
对各种复合材料均有优异的附着
- **Low temperature** curing/drying: 60-80C
低温可固化
- Two-coat system, even **mono coat** available
两层体系，甚至单涂层可行
- WB PU (**no attack**), no fiber rising up
水作为溶剂不会咬噬基材（避免纤维的暴露）



Bayhydrol U/UH has polyurethane backbone could meet the request:

- Flexibility 柔韧
- Chemical resistance/stain resistance 耐抗性
- Haptics with comfortable feeling 量身定制的触感

One type of product, could provide very good adhesion to both metal and plastic
一种产品解决方案可以满足塑料和金属的涂装需求



What we could invent for you:

创新为您：（二）

Anodizing Effect 阳极化效果



10



New decoration

新装饰

- Anodized aluminum surface



2 layer system could achieve the similar decoration as anodized Al
2层涂装可达到类似阳极铝的表面装饰效果

Top coat: Bayhydrol A/Bayhydur: as 2K WB self matt top coat 自消光面

Metallic base coat: Bayhydrol UH as 1K base coat with pigment 底色漆

Plastic substrates 塑料基材

What we could invent for you:

创新为您：（三）

Monocoat 单涂层体系



11

WB 2K black mono coat:

双性双组份单涂

- Substrates: ABS/PC
- Flash off: air drying for 10min
- Drying: 60C for 40min



Lighter/slimmer design
轻量化设计



Substrates: PC/25%GF;
45%GF

Pre-treatment: IPA cleaning

Coating: WB UV mono
metallic

Process: 60C for 10min,
then UV curing

What we could invent for you:

创新为您：（四）

WB UV Coating 水性光固化涂料



12



Adhesion (PC, PC/ABS)附着	Excellent adhesion (5B, 0% loss) 优异的附着	
Gloss (60°) 光泽	>90	
Pencil hardness 铅笔硬度	H (1kg load, on PC)	
RCA abrasion test RCA测试	>300 cycles(175g load)	
High temperature high humidity test 高温高湿测试	Appearance 外观	No change
	Adhesion 附着力	5B, 0% loss



WB UV for efficiency and eco-friendly

水性光固化兼具高效环保

What we could invent for you:

创新为您：（五）

Bio-based Raw Material 生物基原材料



13



- ✓ 70 % bio-based content: Significantly lower carbon footprint with no direct competition with the food chain
70%可再生碳含量，来源于非石化基材料，并且与食物链不构成直接竞争
- ✓ High performance & economically viable:
Compatible with formulations, easy to process and for multiple applications in coatings and adhesives
与HDI类固化剂具有同样的高性能，无需修改配方设计可以应用到涂料胶黏剂等领域



Sustainable/renewable
可再生资源/生物基产品



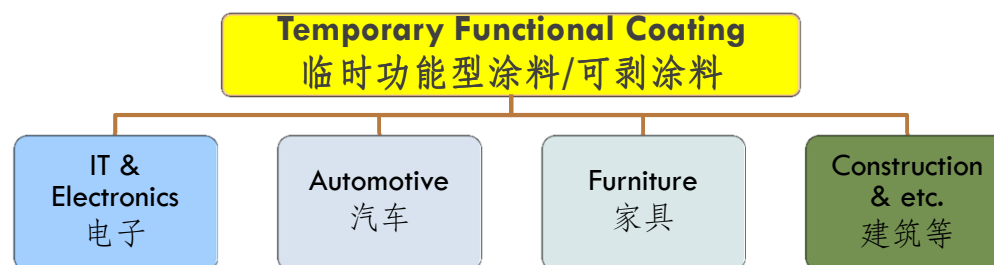
What we could invent for you:

创新为您：（六）

Peelable Coating 临时保护涂料/可剥涂料



14



All surfaces need temporary protection/decoration

- Plastic (PC, ABS, TPU, EVA, PVC...) 塑料
- Metal (Al, Mg alloy, Tin, ...) 金属
- Coated (PU coating, UV coating, ...) 涂装后的表面
- Glass 玻璃
- Leather...皮革等等



Peelable coating for process efficiency
可剥涂料



Thank You!
谢谢!

水性引领绿色生活
平台造就环保产业

