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热塑性聚氨酯弹性体产品说明书

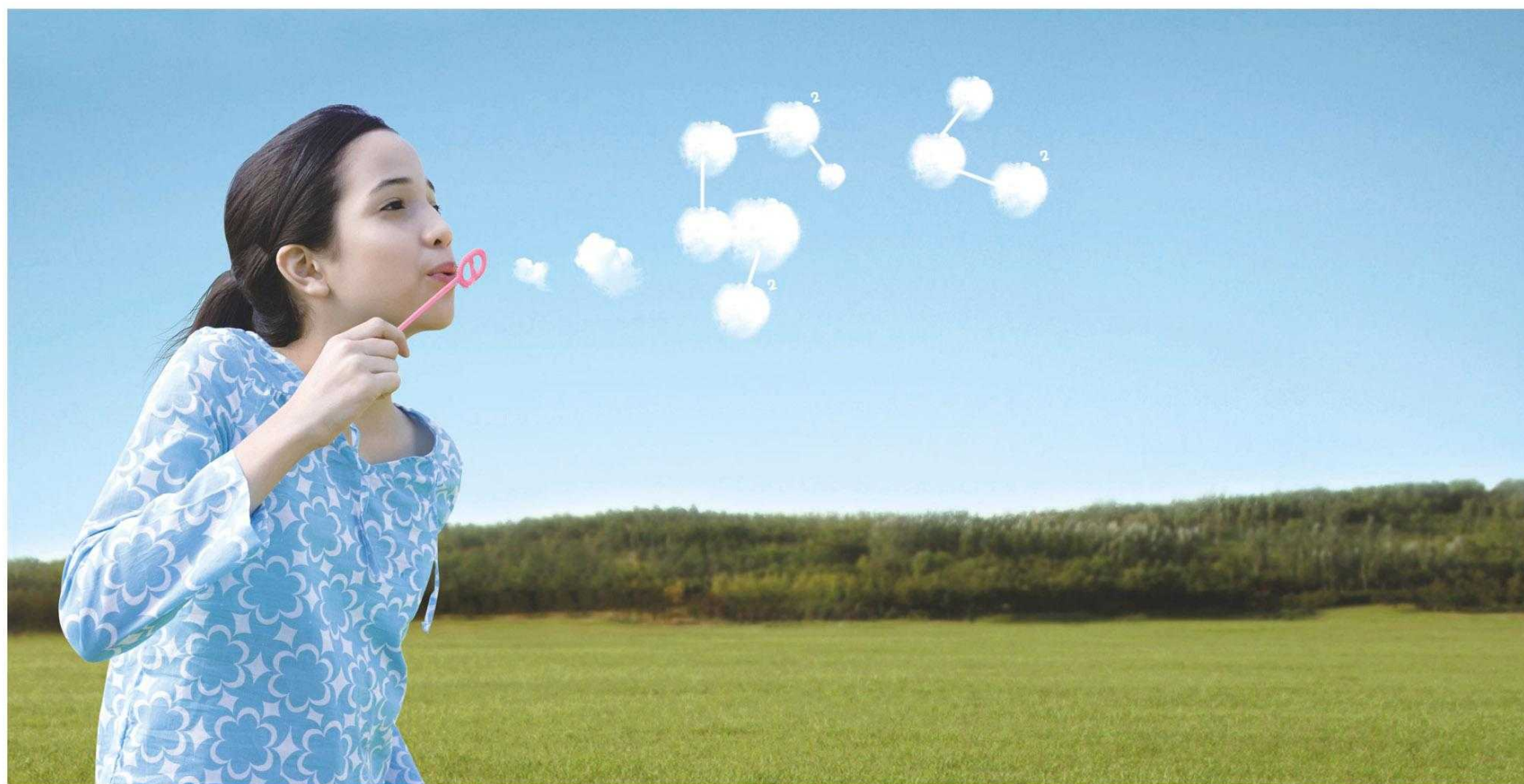
INSTRUCTION OF THERMOPLASTIC POLYURETHANE ELASTOMER



浙江华峰热塑性聚氨酯有限公司
Zhejiang Huafon Thermoplastic Polyurethane Co., Ltd.

Add : 浙江省瑞安市莘塍工业园区
Tel : +0086-577-65175858 Fax : +0086-577-66802366
Http : //www.huafeng.com rahf.cn.alibaba.com

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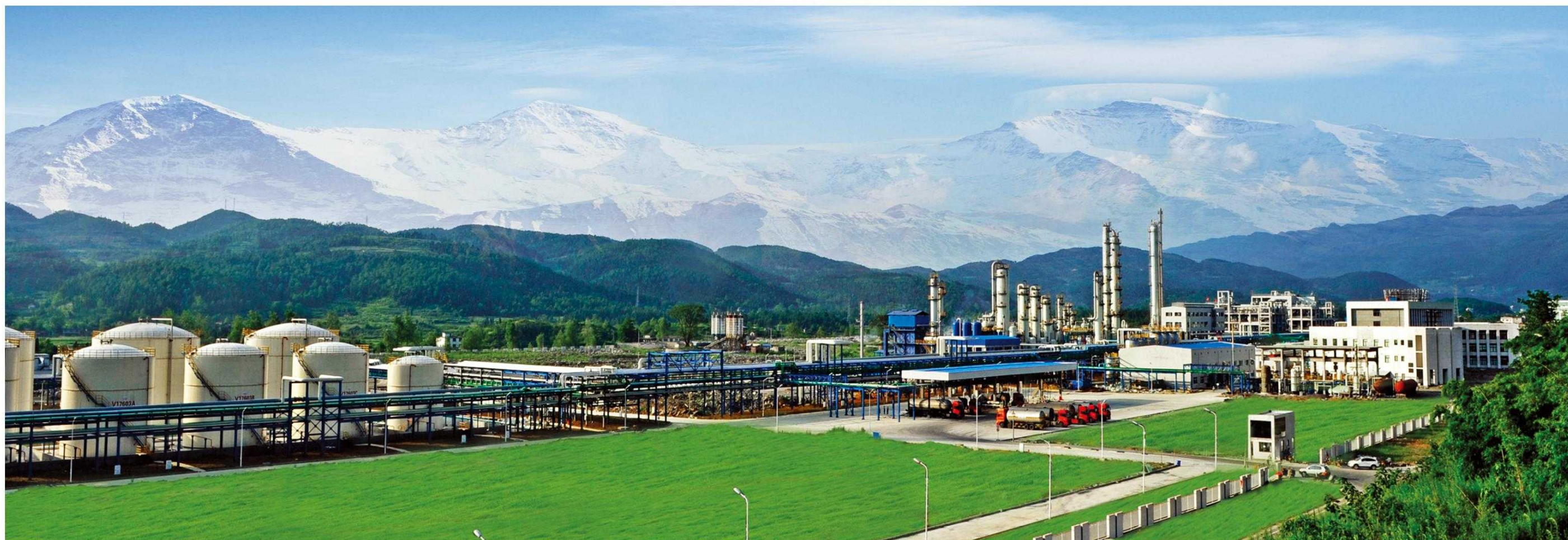
产 品 分 类 04

命 名 规 则 05

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集团简介 / Group Profile

华峰集团创办于1991年5月，是一家以化工新材料为主，以金属、金融、新能源、港口物流等产业为辅的大型民营股份制企业。现辖30余家全资及控股公司，拥有两家上市公司，四家国家高新技术企业。在浙江、上海、重庆、辽宁、江苏、广东等地建有产业基地。

华峰集团主要生产聚氨酯鞋革树脂、聚氨酯纤维（氨纶）、超细纤维革、尼龙66、保温材料、热塑性材料、铝热传输复合材料、己二酸、环己酮等320多个品种、1000多种规格的产品。系中国聚氨酯鞋革树脂行业最大产销企业。

综合实力连续多年名列“中国大企业集团竞争力500强”、“中国民营制造企业百强”、“中国民营企业纳税百强”、“中国石油和化学工业百强”。

Huafon Group, established in May 1991, is a large private enterprise which mainly involves in chemical new materials as well as finance, metal, new energy, logistics, and trading. Huafon Group administers more than 30 wholly-owned or holding companies, two listed companies and four national hi-tech companies. The group has set up production sites in 12 provinces and cities such as Zhejiang, Shanghai, Chongqing, Liaoning, Jiangsu, Guangdong, et al.

Huafon Group produces over 320 varieties of products with more than 1000 specifications. The core products are polyurethane(PU) resin for shoe soles and synthetic leather, polyurethane fiber(spandex), microfiber leather, nylon 66, PU thermal insulating material, aluminum foil ,TPU, adipic acid and cyclohexanone and so on. It is the largest manufacturing and sales enterprise of polyurethane shoe sole and synthetic leather resin in China.

Huafon Group has been awarded for years as “Top 500 Competitive Enterprise Groups of China” , “Top 100 Enterprises of China Petroleum and Chemical Industry” , “Top 100 Private Manufacturing Enterprises of China” and “Top 100 Private Enterprises Tax-payer of China” . Finally, welcome domestic and international clients sincerely contract with Huafon Group to look for business cooperation and strategic development.

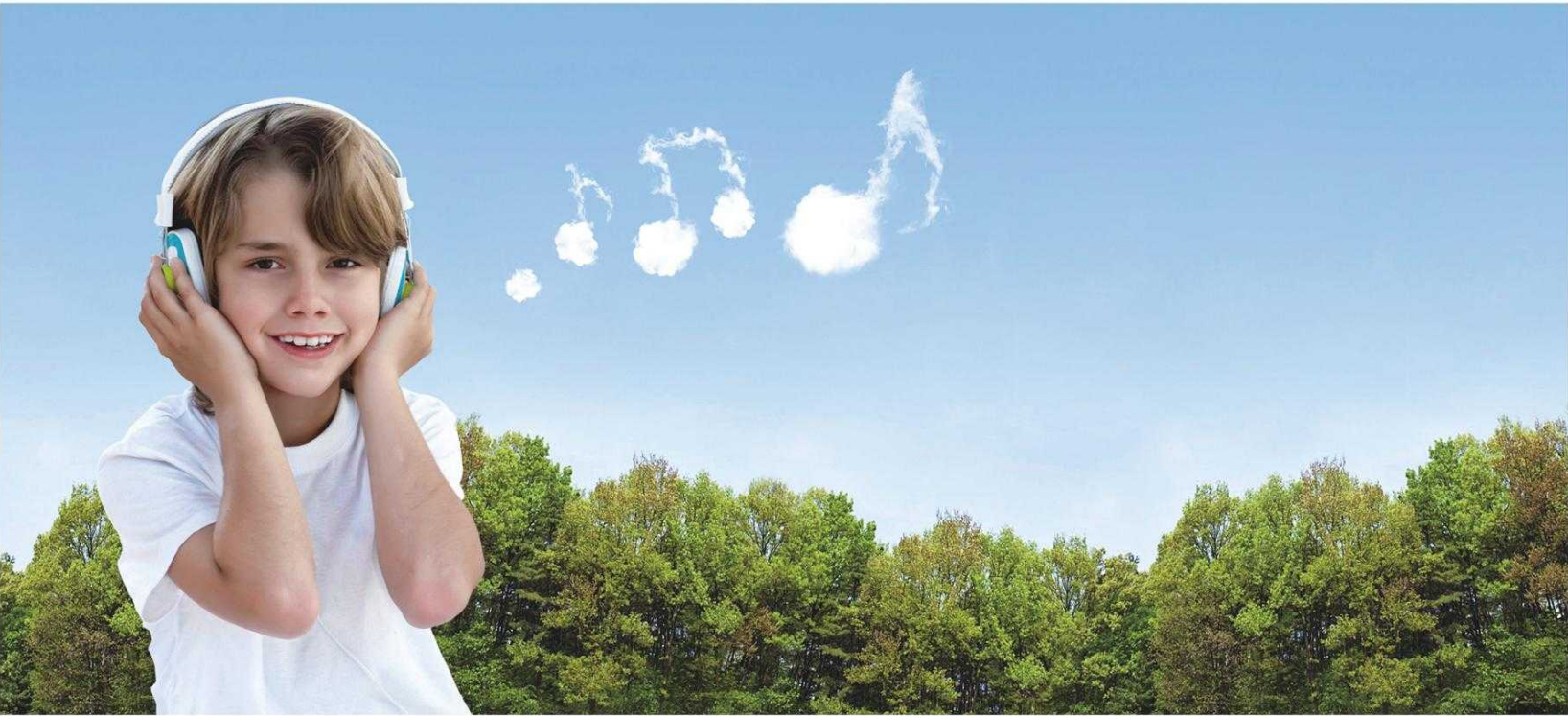
公司简介 / Company Profile

浙江华峰热塑性聚氨酯有限公司专业从事热塑性聚氨酯(TPU)的生产、销售和技术开发。公司成立以来，不断推进技术创新、管理创新，推进清洁生产和节能减排，承诺并践行责任关怀，努力创建自主创新型、资源节约型、环境友好型企业。公司TPU产能逐年提高，目前年产能达到45000吨。Huafon TPU以其优异的物理性能、操作性能、环保性能，广泛应用于鞋材、电子、运动器具、机械设备及汽车零部件、管材、电线电缆、薄膜等个人消费品及工业领域。公司通过了ISO9001:2008, ISO14001:2004以及OHSAS等认证体系，并且严格控制工艺条件及管理，使得Huafon TPU产品质量稳定。未来，公司将以集团公司作为依托，凭借卓越的研发、管理能力更大地满足国内外客户需求，并为客户提供良好的解决方案。

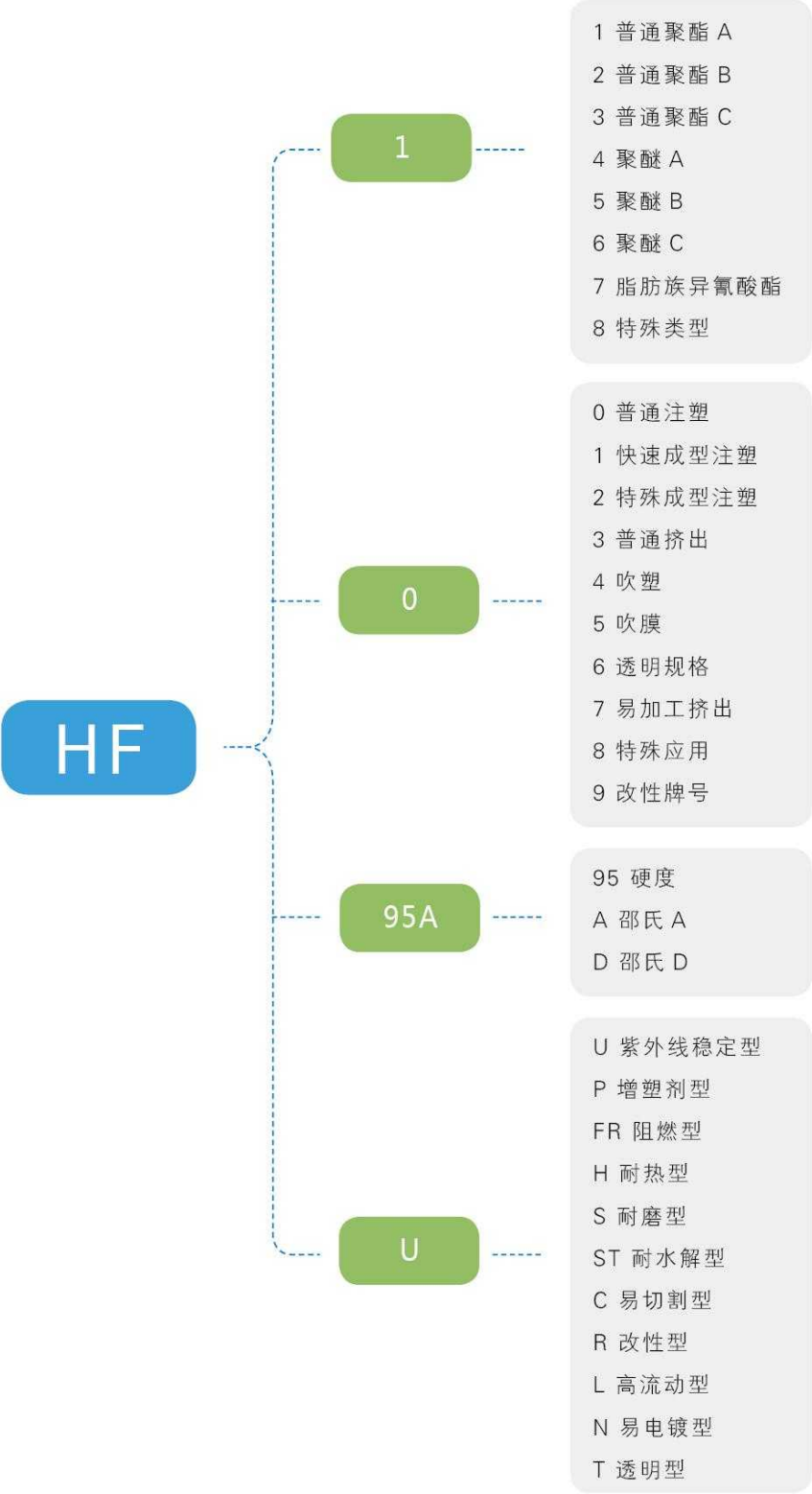
Zhejiang huafon thermoplastic polyurethane co., LTD. Is specialized in TPU's production and technical service. since founded, Huafon TPU is adhere to the technology and management innovation, and development continuously advance management innovation, and advance energy conservation and emissions reduction. At present, the annual output capacity is 45000 tons. Hoafon TPU is known for its excellent physical properties, easy-process and environmental protection. Now Huafon TPU is widely used in electronic field, sports equipment and mechanical engineering parts. The company is certified by the ISO9001:2008, ISO14001:2004 and OHSAS certification system. With advanced technology and efficient management, the quality is excellent and stable. In the future, the company will grow up with the support of Huafon's group and excellent innovation/management ability. Huafon TPU will provide not only the qualified manufacture and also solution of customers' technical requirements.

产品分类 / Category

材料分类		聚 酯					聚 醚		
	HF-10XX	HF-11XX	HF-23XX	HF-30XX	HF-33XX	HF-34XX	HF-36XX	HF-40XX	HF-43XX
65-70A	HF-1265AP			HF-3065AP					
	HF-1070AP			HF-3070AP					
75-80A	HF-1075AP							HF-4075A	
	HF-1080A	HF-1175AP	HF-1380A		HF-3380A			HF-4080A	
85-90A	HF-1085A	HF-1180AP	HF-1385A				HF-3685A		
	HF-1090A	HF-1185A	HF-2385A	HF-3085A	HF-3385A			HF-4085A	HF-4385A
			HF-1388A	HF-3090A	HF-3390A		HF-3690A	HF-4090A	HF-4390A
92-98A	HF-1095A			HF-3095A		HF-3492A	HF-3695AT		
	HF-1098A		HF-2395A		HF-3395A	HF-3495A		HF-4095A	HF-4395A
			HF-2398A	HF-3098A	HF-3398A	HF-3495AT	HF-3698A		
60-65D	HF-1060D	HF-2060DS		HF-3060DS			HF-3660D		
	HF-1065D			HF-3065D			HF-3665D		
70-75D	HF-1071D			HF-3071D					
种 类	A,X,S,U,P,N,ST	A	A,C,U	A,U,P	A,U,	A,X	A,U,X	A,U	A,U
特 性	普通规格	快速成型 经济规格	挤出成型 经济规格	普通注塑 高物性耐寒	挤出成型	吹塑成型	高透注塑	普通聚醚	挤出成型聚醚



命名规则 / Nomenclature

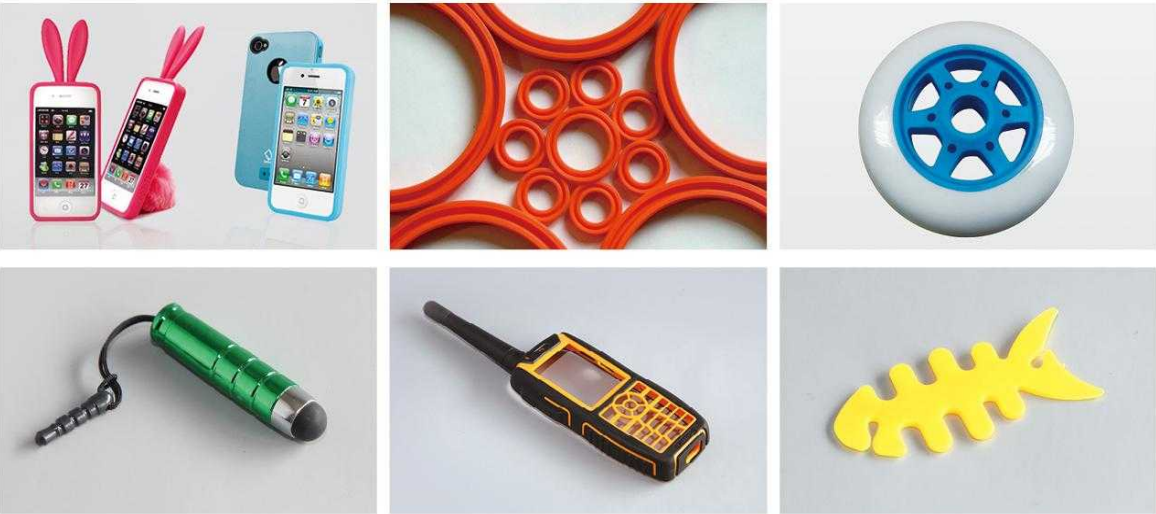




聚酯型 TPU
Polyester-based TPU

- 硬度：Shore A 65 – Shore D 73
Hardness: Shore A 65 – Shore D 73
- 操作：注塑
Operation: Injection molding
- 特性：优异的力学性能、耐磨防滑、良好的低温柔韧性、良好的加工流动性及快速成型
Characterstics: Excellent physical properties, Abrasion resistance, Low temperature flexibility
- 应用：安全鞋底、鞋材配件、包胶、共混改性、足球鞋大底、配件、手机护套、射出轮、运动护具及机械零配件
Applications: Safty shoe sole, Accessories, Over-molding, Compounding, Footwear, Cell-phone cover, Castor, Protective gear, Automotive etc.

项目 Items	硬度 Hardness	抗张强度 Tensile Strength	伸长率 Elongation	撕裂强度 Tear Strength	100% 量 100% Modulus	耐磨 Abrasion
检测标准 Standard	ASTM D2240	ASTM D412	ASTM D412	ASTM D412	ASTM D412	DIN 53516
单位 Unit	Shore A	MPa	%	KN/m	MPa	mm ³
HF-1265AP	68A	25	1100	93	2.7	100
HF-1070AP	72A	25	950	105	3.2	80
HF-1070AX	72A	22	800	96	3.6	50
HF-1075AP	75A	25	900	92	3.9	95
HF-1275AP	75A	26	1000	105	3.7	120
HF-1080A	82A	26	800	98	4.8	120
HF-1280AX	81A	23	650	96	5.3	100
HF-1085A	87A	32	750	118	7.4	80
HF-1285AX	84A	25	850	119	5.2	/
HF-1090A	91A	32	550	134	9.0	80
HF-1095A	95A	40	500	195	12.5	80
HF-1098A	60D	40	400	234	18.0	95
HF-1060D	64D	44	350	230	25.0	65
HF-1065D	68D	45	350	305	26.0	65
HF-1071D	73D	45	300	312	27.5	/





聚酯型 TPU
Polyester-based TPU

- 硬度：Shore A 70 – Shore D 63
Hardness: Shore A 70 – Shore D 63D
- 操作：注塑
Opearion: injection molding
- 特性：良好的流动性及快速成型、易脱模
Characterstics: Easy processing, Fast de–molding
- 应用：园艺鞋、鞋材配件、时装鞋底、天皮
Applications: Gardening shoes, Accessories, Fashion shoe sole etc, Heel life.

项目 Items	硬度 Hardness	抗张强度 Tensile Strength	伸长率 Elongation	撕裂强度 Tear Strength	100% 量 100% Modulus	耐磨 Abrasion
检测标准 Standard	ASTM D2240	ASTM D412	ASTM D412	ASTM D412	ASTM D412	DIN 53516
单位 Unit	Shore A	MPa	%	KN/m	MPa	mm³
HF-1170AP	72A	18	1000	100	3.1	/
HF-1175AP	76A	18	550	96	5.6	/
HF-1180AP	80A	18	500	103	6.7	/
HF-1185A	85A	19	500	118	7.6	/
HF-1190A	91A	29	500	135	7.8	/
HF-1195A	95A	36	450	210	15.0	/
HF-2060DS	63D	45	400	280	22.0	70





项目 Items	硬度 Hardness	抗张强度 Tensile Strength	伸长率 Elongation	撕裂强度 Tear Strength	100% 量 100% Modulus	耐磨 Abrasion
检测标准 Standard	ASTM D2240	ASTM D412	ASTM D412	ASTM D412	ASTM D412	DIN 53516
单位 Unit	Shore A	MPa	%	KN/m	MPa	mm ³
HF-3065AP	68A	18	1000	85	2.4	120
HF-3070AP	72A	20	750	93	2.8	100
HF-3085A	87A	35	600	150	6.4	80
HF-3090A	91A	35	550	160	9.2	60
HF-3190A	92A	32	500	170	10.0	/
HF-3095A	95A	34	450	167	12.4	65
HF-3098A	60D	43	400	205	16.0	65
HF-3060D	63D	48	380	280	23.0	70
HF-3065D	67D	46	350	275	25.0	70
HF-3071D	73D	48	350	308	42.0	70
HF-3685A	88A	32	700	140	7.0	120
HF-3690A	91A	32	500	130	9.5	100
HF-3695AT	94A	36	400	210	16.0	100
HF-3698A	53D	42	400	200	18.0	75
HF-3660D	63D	42	300	240	25.0	70
HF-3665D	68D	45	280	311	31.0	70

聚酯型 TPU
Polyester-based TPU

●硬度：Shore A 65 – Shore D 73

Hardness: Shore A 65 – Shore D 73

●操作：注塑

Operation: Injection molding

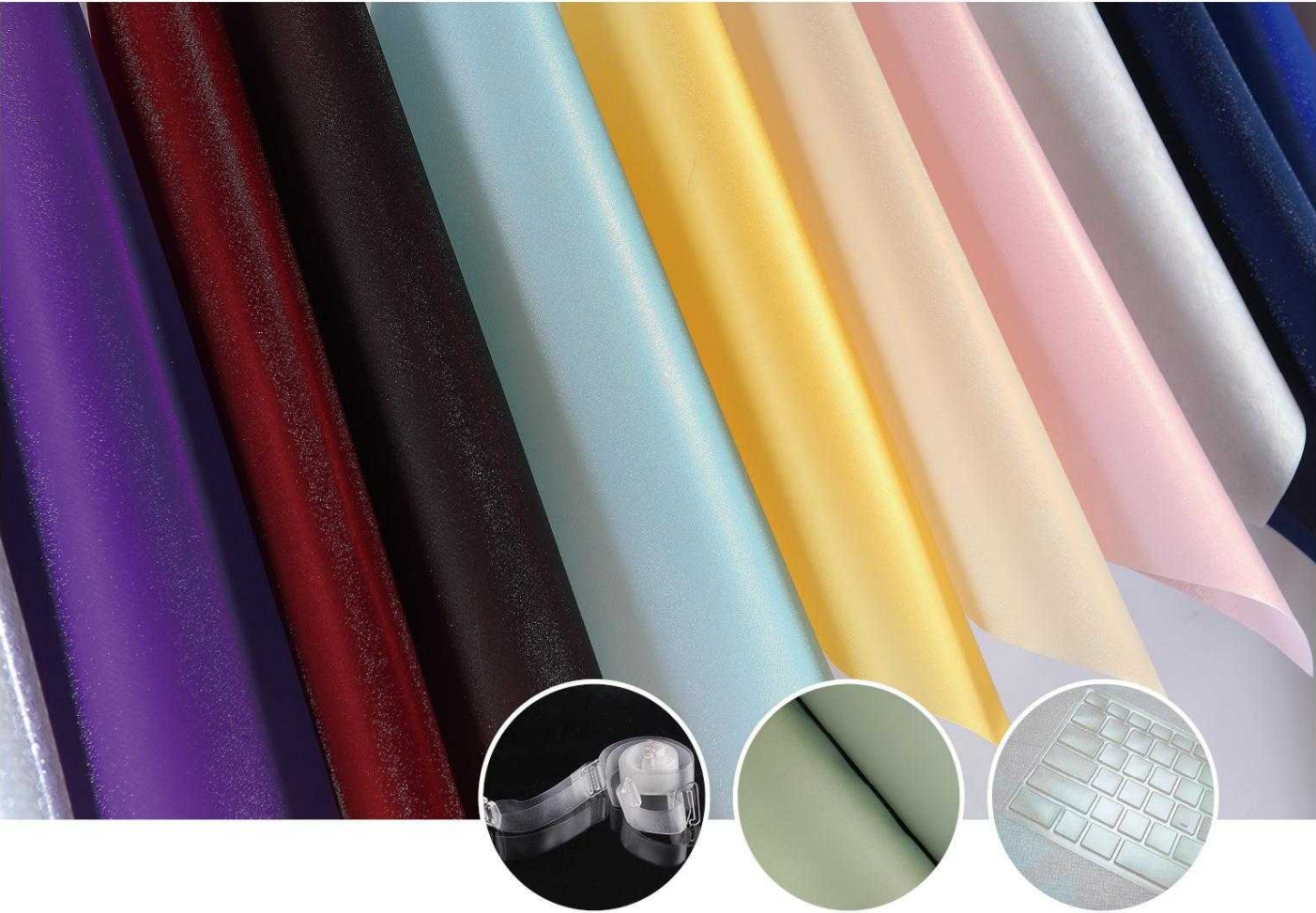
●特性：优异的力学性能、耐磨、良好的流动性及快速成型、耐寒耐热、透明度好

Characterstics: Excellent physical proteries, Abrasion resistance, Easy processing, Fast de-molding Cold/heat resistance, Great Transparency

●应用：足球鞋底、鞋材配件、密封件、运动护具、手机套、机械零配件、共混改性

Applications: (Transparent)Footwear, Sealing ring, Accessories, Protective gear, Cell-phone cover, Automotive, Compounding





聚酯型 TPU
Polyester-based TPU

- 硬度：Shore A 80 – Shore D 60
Hardness: Shore A 80 – Shore D 60D
- 操作：挤出，吹塑，吹膜
Operation: Extrusion, Blow molding, Blowing film
- 特性：优异的力学性能、优异的透明度、易加工及稳定的挤出性能、熔点稳定
Characterstics: Excellent physical proteries, Gear Transparency, Easy&stable process, stable processing point
- 应用：薄膜、管材、电线电缆、传送带、松紧带、肩带、气垫、鞋饰片
Applications: Film, Cable, Tube, Coveyer belt, Elastic tape, Straps, Air-bag, Accessories etc.

项目 Items	硬度 Hardness	抗张强度 Tensile Strength	伸长率 Elongation	撕裂强度 Tear Strength	100% 量 100% Modulus	耐磨 Abrasion
检测标准 Standard	ASTM D2240	ASTM D412	ASTM D412	ASTM D412	ASTM D412	DIN 53516
单位 Unit	Shore A	MPa	%	KN/m	MPa	mm ³
HF-3785A	85A	30	700	105	5.5	/
HF-3795A	95A	35	500	130	13.0	/
HF-3380A	80A	25	800	100	3.5	120
HF-3385A	87A	28	650	140	6.8	120
HF-3390AX	91A	32	550	155	8.6	150
HF-3395AX	95A	34	400	210	15.0	120
HF-3398AX	60D	38	350	240	17.5	100
HF-1380AC	80A	13	948	85	3.6	180
HF-1385AC	85A	18	750	108	5.4	180
HF-1380A	81A	28	750	110	4.8	150
HF-1385A	85A	32	650	137	6.0	120
HF-1395AX	94A	32	400	220	16.5	140
HF-1398A	57D	33	475	205	15.0	165
HF-2385A	86A	28	700	135	6.6	150
HF-2398AX	58D	33	450	210	16.5	150
HF-3492A	92A	40	485	173	11.2	75
HF-3495A	95A	38	473	182	12.6	100
HF-3495AT	94A	41	425	206	15.3	92

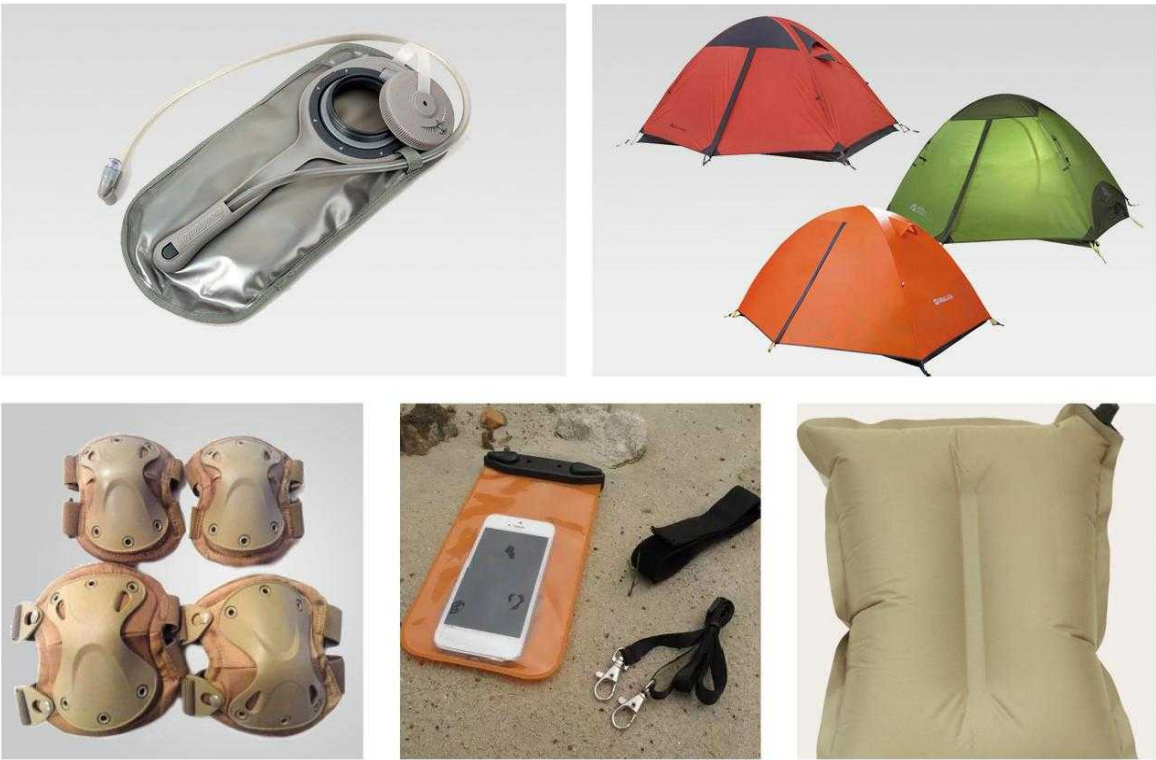


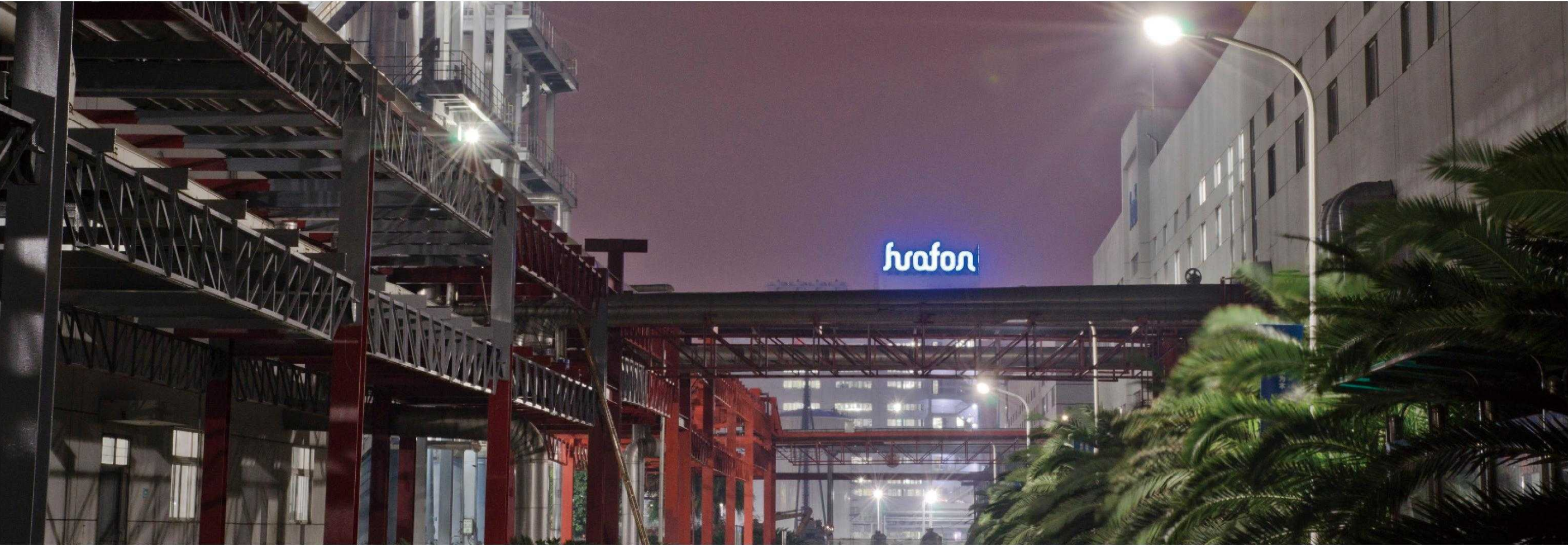


聚醚型 TPU
Polyether-based TPU

- 硬度: Shore A 80 – Shore D 55
Hardness: Shore A 80 – Shore D 55
- 操作: 注塑、挤出、流延、压延
Operation: Injection molding, Extrusion, Calender
- 特性: 优异的耐水解耐霉菌性、低温柔韧性及弹性、耐老化
Characterstics: Excellent hydrolytic resistance, Bacteria resistance, Low temperature elastic, Aging resistance
- 应用: 管材、护套、共混改性、薄膜、消防水带、动物耳标、体育用品配件
Applications: Tube&hose, Fabric coating, compounding, Film, Fire hose, Animal ear tag,Accessories etc.

项目 Items	硬度 Hardness	抗张强度 Tensile Strength	伸长率 Elongation	撕裂强度 Tear Strength	100% 量 100% Modulus	耐磨 Abrasion
检测标准 Standard	ASTM D2240	ASTM D412	ASTM D412	ASTM D412	ASTM D412	DIN 53516
单位 Unit	Shore A	MPa	%	KN/m	MPa	mm ³
HF-4075A	76A	23	600	78	4.8	60
HF-4080A	80A	25	550	80	6.3	60
HF-4085A	85A	28	520	95	7.2	60
HF-4090A	90A	30	500	105	10.0	65
HF-4095A	95A	32	450	120	13.0	65
HF-4098A	54D	35	380	140	16.0	70
HF-4380A	80A	25	600	75	6.5	60
HF-4385A	85A	28	550	88	4.6	60
HF-4390A	90A	30	500	100	10.5	65
HF-4395A	95A	32	450	110	13.0	65
HF-4398A	54D	34	380	130	17.0	70





华峰 TPU 产品注意事项
Hualon TPU Products Recommendations

包装及储存 Package & Storage

- 华峰 TPU 系列产品基本包装规格为 25kg 纸塑袋 / 铝膜袋包装。
Hualon TPU products packaging specifications is for 25kg plastic bag / aluminum foil bag.
- 由于 TPU 是一种吸湿性较强的材料，水分含量较高的 TPU 对加工成型以及最终产品物性等有不影响，因此 TPU 成品应该在阴凉干燥且避免阳光直射的环境中储存。
Because of the high moisture absorbing property, the process and properties of final manufacture could be influenced. For this reason, TPU products should be well stored in a dry, cool and shady area.
- 打开包装的 TPU 粒子严禁长时间暴露于空气当中，请尽快使用。TPU 产品在使用前需进行干燥，建议干燥温度及时间为 90-110℃ x 2-4h。建议使用除湿干燥机以达到最佳的干燥效果。
Never put opened packages exposed in open air for prolonged periods of time during molding and processing. Pre-drying is necessary, and recommended conditions is 90-110℃ x 2-4h. Recommend the use of dehumidifier in order to achieve the best effect of drying.

安全与环保 Safety & Environment

- 人体对 TPU 一般不会出现过敏反应，如接触 TPU 原料及产品感到不适，请立刻停止接触，严重情况请就医。
Generally, there will be not allergies caused by TPU. If there was uncomfortable during contacting with TPU, please stop and see the doctor.
- TPU 在塑化熔融及操作加工过程中，会发生降解及氧化反应，可能释放少量有害气体，因此加工场地需做好通风。
During melting and processing of TPU, a small amount of harmful gases may be released because of some degradation, so the ventilation is necessary.
- 依环保法规规定，TPU 为正常废弃物，如允许可进行掩埋、焚烧处理。
According environmental protection regulations, TPU can be treated as normal wastes, such as landfill and incineration.

测试及条件 Tests & Conditions

- 华峰 TPU 产品测试数据如无特殊说明则均在 23 ± 2℃，55 ± 5% 湿度的条件下测试获得，其他测试条约及标准规定除外。
The values of Hualon TPU product if no special instructions are obtained in the conditions of 23 ± 2 °C 55 ± 5% humidity, except for the other treaty and standard test
- 华峰 TPU 产品测试数据如无特殊说明均在 90℃条件下静置 12h 后测试获得。
The values of Hualon TPU product if no special instructions are aged in the condition of 90 °C x 12h.
- 华峰 TPU 产品，硬度测试试片为厚度 6mm 裁切圆形试片，抗张强度测试试片为厚度 2mm 裁切标准试片，并在多次测试下取其平均值。
The specimens of hardness test is 6mm thickness cut circular pieces, and of tensile strength test is 2mm

免责声明 Legal Disclaimer

- 本说明书中所提供的物性测试指标仅供客户参考使用，由于测试条件、加工设备等不同，建议在加工前务必对原材料进行检测再生产。
客户具体保证指标均需双方共识以保证书或合同规定为准。
The information and data described in this booklet are for reference only. Because of different test standards and equipment, double-check of the value is recommended before using. Any warranty will be based on exclusive agreement with the customer.
- 本公司的技术服务团队有义务协助客户解决在使用本公司产品过程中遇到的技术问题，但技术建议及调整所造成的客户任何形式的间接损失均不在本公司的赔偿范围之内。
Hualon TPU and its employees are committed to solve problems during using Hualon TPU products. However, under no circumstances will Hualon TPU and its employees be liable for any claim for any loss or damage.
- 本公司有提供给客户合适产品的义务，但客户亦有责任确认产品的适用性。因产品确认问题引起的间接、续发、随附的损失、利润的损失，采购本公司原物料以外的其他材料、人工水电损失以及客户以外第三方的损失，本公司均不承担。
Hualon TPU provides quality products to its customers, nevertheless, the customer should determine the product meets the requirements and standard. Nor will Hualon TPU be responsible for any indirect damages



扫一扫发现更多精彩

TPU 热熔胶膜

Polyester TPU Hotmelt film



主要特性

该产品是一种线性分子的聚酯型热塑性聚氨酯弹性体，与 TPU、PVC、Polyester、尼龙、布及真皮等材质有良好的粘结性，且在粘结后具有接着强度高、高韧性、耐磨及良好的弹力等特点。

Characteristics

This is a special kind of linear thermoplastic Polyurethane Elastomer, which is designed for TPU Hotmelt film. It exhibits Good toughness, wear resistance, elasticity and excellent bonding strength for TPU, PVC, Nylon, Polyester, fabrics, leather etc.

应用领域

适用于热熔胶膜、纺织贴合、鞋材、止水胶条、汽车工业等。

Application

Hotmelt adhesive film, fabric lamination, shoe materials, seam sealing tapes and automobile industry.

规格 Specifications	外观 Appearance	硬度 Shore A	MVR cm ³ /10min (°C /kg)	Tfb 流动开始温度 Initial flow temp (°C)	不黏时间 Tack free time (min)
检测方法 Test method	—	ASTM D2240	ASTM D1238	JIS K7311	—
HF-3H80A	Transparent granules	80 ± 2	10-15/150/5	120 ± 5	8 ± 3
HF-3H80AL	Transparent granules	78 ± 2	10-15/150/5	110 ± 5	9 ± 3
HF-3H80AH	Transparent granules	80 ± 2	20-30/180/5	140 ± 5	6 ± 3
HF-3H85A	Transparent granules	85 ± 2	30-40/150/5	120 ± 5	10 ± 3
HF-3H85AH	Transparent granules	85 ± 2	10-15/150/5	130 ± 5	9 ± 3
HF-3H75A	Transparent granules	74 ± 2	15-25/150/5	90 ± 5	15 ± 3
HF-3H75AH	Transparent granules	76 ± 2	15-25/150/5	120 ± 5	9 ± 3

TPU 热熔胶磨粉系列

TPU Hotmelt powder



扫一扫发现更多精彩



主要特性

该产品是一种线性分子的聚酯型热塑性聚氨酯弹性体，具有熔点低、手感好等特点，与 TPU、PVC、Polyester、尼龙、布及真皮等材质有良好的粘结性。

Characteristics

This series is a special kind of linear thermoplastic Polyurethane Elastomer, which is designed for TPU Hotmelt Powder. It exhibits low melting point, excellent feel and excellent bonding strength for TPU, PVC, Nylon, Polyester, fabrics, leather etc.

应用领域

该系列产品适用于热熔胶港宝、高档衬、印花等领域也可直接用于热熔胶膜、纺织贴合、鞋材、止水胶条等领域。

Application

Toe-Puffs, high-end interlining, heat transfer printing industry, hotmelt adhesive film, textile, footwear and seam sealing tapes.

规格 Specifications	外观 Appearance	MVR/150°C /kg cm ³ /10min	软化点 Softening Point (°C)
检测方法 Test method	—	ASTM D1238	ASTM D36
HF-395	White granules	90~105	73 ± 3
HF-395L	White granules	40~55	80 ± 5
HF-395H	White granules	3~10	110 ± 5
HF-395EH	White granules	3~10	125 ± 5



扫一扫发现更多精彩

溶剂型 TPU 热熔胶 Solvent-based TPU adhesive



主要特性

该产品是一种线性分子的聚酯型热塑性聚氨酯弹性体，具有初始粘接力强，溶解速度快，结晶速率可选择性强等特点，与 TPU、PVC、Polyester、尼龙、布及真皮等材质有良好的粘结性。可单独使用，也可与交联剂共同使用。

应用领域

该系列产品适用于鞋材、纺织品、家具（MDF 板）及消防水带共挤出等。

Characteristics

This series is a special kind of linear thermoplastic Polyurethane Elastomer, which is designed for Solvent-based TPU adhesive. It exhibits excellent initial bonding strength, good solvent solubility and strong crystallization and excellent bonding strength for TPU, PVC, Nylon, Polyester, fabrics, leather etc. It can be used as a mono-component adhesive or with crosslinking agents.

Application

Shoe, textile laminations, furniture products (MDF board) and fire hose co-extrusion

规格 Specifications	溶液粘度 (15% in MEK) Solution viscosity (cps/23°C)	结晶速率 Crystallization Rate	最低热活化温度 Activation temp. (°C)
HS-2455YH	1600~2000	slow	65~75
HS-3002E	200~600	fast	55~65
HS-3002EM	700~1500	fast	55~65
HS-3002EH	1600~2400	fast	55~65
HS-3002ESH	2500~3500	fast	55~65
HS-4201EH	1600~2200	very fast	55~65
HS-3802YH	1600~2200	fast	55~65
HS-3900YH	1600~2200	fast	55~65



扫一扫发现更多精彩

压延级 TPU Calendering TPU



主要特性

该产品是一种线性分子的聚酯型热塑性聚氨酯弹性体，具有机械性能高、操作温度宽、流动性好等优点，尤其适用于压延或烧结加工。若是烧结加工，可将粒料低温碾磨成粉，调整适当温度，以便加工。

Characteristics

This is a special kind of linear thermoplastic Polyurethane Elastomer, which is designed for Calendering processing and sintering processing. It exhibits high mechanical properties, wide operating temperature window and easy to process etc. It can be milled to powder with different size depending on sintering process.

应用领域

该系列产品应用于充气垫，保护套，传送带，输送带等织物衬底的熔融涂布；压延薄膜及低熔点 TPU 母粒载体。

Application

Air bag, protective wire, convey belt, calendaring film and powder slushing

规格 Specifications	硬度 Shore A	熔融指数 Melt index (g/10min)
HF-3885A-1	85+2	10-20
HF-3890A-1	90+2	10-20

100% 模量 100% modulus (Mpa)	拉伸强度 (Mpa)	撕裂强度 Tear strength (KN/m)	伸长率 Elongation (%)
5.5	28	120	700
8	35	140	600



HF-65F 热塑性聚氨酯弹性体技术数据表

Thermoplastic Polyurethane Elastomer

HF-65F Technical Data Sheet



介绍 Introduction

HF-65F 是一种线性分子的聚酯型热塑性聚氨酯弹性体，为 TPU 发泡注塑特别设计，在本司指定发泡剂的配合下，最低成品密度可达 0.38g/cm^3 。该类型产品硬度低、柔软性好、成型快、操作温度低，具有很好的流动性及较高的操作稳定性，主要应用于鞋底、运动器材配件等。

HF-65F is a special kind of linear Thermoplastic Polyurethane Elastomer, which is developed for foam injection molding. The manufacture density of 0.38g/cm^3 can be achieved, with Huafoh TPU foaming agent and certain processing technology. The low hardness, good softness, short cycle time and good stability of operation can be used for shoe soles, sports equipment accessories etc.



特性 Properties

物理性能 Test method, unit, value	标准 criterion	单位 unit	数值 1 Numerical 1	数值 2 Numerical 2	数值 3 Numerical 3	数值 4 Numerical 4
密度 Density	ASTM D792	G/m^3	1.18	0.78	0.58	0.38
硬度 Hardness	ASTM D2240	Shore A	70	66	61	54
拉伸强度 Tensile strength	ASTM D412	MPa	22	12	6.2	2.1
断裂伸长率 Elongation	ASTM D412	%	1000	870	620	490
100% 弹性模量 100% modulus	ASTM D412	MPa	2.6	1.9	1.2	0.5
撕裂强度 Tear strength	ASTM D624	kN/m	100	53	39	18
磨损 Abrasion	DIN 53516	mm^3	120	150	200	260
黄度 Color	ASTM E313	—	6	—	—	—
浊度 (2mm) Transparency	ASTM D1003	%	6	—	—	—

☆ 所有测试数据均在室温条件下对标准试样所以进行的测试，该数据作为参考性，数值 2/3/4 为发泡后物性。

The values are obtained in the conditions of $23 \pm 2^\circ\text{C}$, $55 \pm 5\%$ humidity. And value2~4 is the foamed manufacture.



加工工艺 Processing

本产品特别适合于发泡注塑成型，只需普通三段式单螺杆，通常长径比 (L/D) 在 16~20:1，压缩比在 2.0~2.5:1 之间。因 TPU 熔体粘度较高，且在料管里容易产生高剪切力而破坏 TPU 的物性，应避免采用压缩比过高的螺杆。建议加工温度 130~180 度，模切温度一般在 25℃到 45℃之间，为了达到最佳的发泡密度，应对模具结构做特殊设计。经发泡后边角料可回收使用，在使用前请干燥再粉碎，最高添加比例可达 30%。

HF-65F is suitable for foam injection molding. L/D of the ordinary injection machine is 16~20:1, while compression ratio is 2.0~2.5:1 and Processing temp is 130~180℃. The lower density could achieve with special mold design. Offcut of manufacture could be used but less than 30% into the fresh after drying.

后处理 After Treatment

发泡成品与其他材料组合使用性能优异，可通过多种组合方式，制成鞋底或其他制品。使用标准胶黏剂时，鞋底只需要进行最基本的表面处理可达到较强的粘接力。

The foamed manufacture could adhere easily to varied materials with normal adhesive after surface treatment. Several multilayers with foamed TPU and other materials provide easily design and performance.

安全与环保 Safety & Environment

人体对 TPU 一般不会出现过敏反应，如接触 TPU 原料及产品感到不适，请立刻停止接触，严重情况请就医。TPU 在塑化熔融及操作加工过程中，会发生降解及氧化反应，可能释放少量有害气体，因此加工场地需做好通风。依环保法规规定，TPU 为正常废弃物，如允许可进行掩埋、焚烧处理。

Generally, there will be not allergies caused by TPU. If there was uncomfortable during contacting with TPU, please stop and see the doctor. During melting and processing of TPU, a small amount of harmful gases may be released because of some degaration, so the ventilation is neccessary. According environmental protection regulations, TPU can be treated as normal wastes, such as landfill and incineration.

☆ 如需得到更详细信息，请与华峰集团联系！



浙江华峰热塑性聚氨酯有限公司
Zhejiang Huafon Thermoplastic Polyurethane Co., Ltd.

地址 / Add: 浙江省瑞安市莘塍工业园区
电话 / Tel: 0086-577-65175858
传真 / Fax: 0086-577-66802366
网址 / Http: //www.huafeng.com