

# 農業廃棄物由来の バイオプラスチック『TEXa』

## 『TEXa』とは

TEXaは、マレーシアの大手コングロマリットであるTEXCHEMグループが開発した、お米のもみ殻又はパーム油の搾り房（非可食部）など、従来廃棄される部分を再利用したバイオプラスチックです。

原料の51%を農業廃棄物由来のバイオマス、残りの49%に石油由来のプラスチックや添加剤を配合、農業廃棄物を再利用できると同時に、石油由来のプラスチックの使用量を削減し、二酸化炭素排出量削減に貢献が可能です。

- ◆射出成型とシート成形に対応可能なバイオプラスチック
- ◆TEXaに49%含まれる石油由来のプラスチックはPP or エラストマーの2種類
- ◆食品グレード（FDA対応や日本食品衛生法対応グレード有り）、高剛性グレード、良流動グレード等、ご用途にあわせたグレードをご提案可能
- ◆色はベージュ又はナチュラル（こげ茶）をラインナップ、着色も可能
- ◆外観特徴（表面の質感）は、以下2タイプ。

○Particulate Textured（繊維質感有）

細かい繊維質感が残りバイオプラスチックらしい外観

○Non-Textured（繊維質感無）

繊維質感を残さず従来の石油由来のプラスチックに近い外観

※サンプルの提供も可能ですので、お気軽にお問合せください。

## 『TEXa』の強み

- ・PPと同等レベルの耐久性を有しており、幅広い用途に検討可能
- ・東南アジア中心に上市実績多数（日本国内でも続々上市準備中）
- ・既存成形設備で生産が可能
- ・生産コストを抑制し一般的な生分解性樹脂より低価格を実現
- ・日本食品衛生法対応グレード（E2741、P2250が該当）あり
- ・バージン材を使わないリサイクルPPグレードあり



伊藤忠 株式会社

## 各種環境規制や認証に対応



※日本食品衛生法対応のグレード有り

## 用途例



日用品・雑貨



カトラリー



パーソナルケア



物流



玩具



家具



家電・OA

## 汎用グレード 物性表

Properties	Test Method	TEXα® Grades			
		G2632	G2623	G2341	F2250
<b>Features</b>		High Flow	Good Ductility	Standard Grade	High Strength & Stiffness
<b>Biomass Type</b>	-	Rice Husks	Rice Husks	Rice Husks	Palm Fibre
<b>Surface Appearance</b>	-	Non-Textured	Non-Textured	Particulate Texture	Fibrous Texture
<b>Colour</b>	-	Beige	Beige	Beige	Beige
<b>Biobased Carbon Content (%)</b>	ASTM D6866	28	28	35	37
<b>Density (g/cm<sup>3</sup>)</b>	ASTM D792	1.1	1.1	1.1	1.1
<b>Mould Shrinkage (%)</b>	In-House Method	0.9-1.1	0.9-1.1	0.6-0.8	0.4-0.6
<b>Spiral Flow Length* (cm)</b>	In-House Method	34	28	28	27
<b>Flexural Strength (MPa)</b>	ASTM D790	27	20	36	45
<b>Flexural Modulus (MPa)</b>	ASTM D790	1100	787	1650	2200
<b>Notched Impact Strength (J/m)</b>	ASTM D256	47	71	46	100
<b>HDT @ 0.455 MPa (°C)</b>	ASTM D648	91	-	104	138
<b>HDT @ 1.82 MPa (°C)</b>	ASTM D648	62	-	65	85
<b>Recommended Application</b>		Household applications; Office stationery, i.e. pen, marker pen and highlighter.	Container lids, spouts and caps	Containers/ Trays; Household applications such as hanger; furniture; Office stationery; Home appliance	Household, Furniture, Office Automation, Home Appliances, HIPS replacement
<b>Intellectual Property (IP)</b>		These biobased materials have been granted patent in US, UK, Germany, Italy, France, Australia, Japan, Taiwan, Hong Kong, Singapore, The Philippines and Malaysia.			

### Note:

The stated values are typical values only and shall not to be construed as specification limits. Users should confirm results by their own tests.

As TEXα® is made from natural material, there may be variation in colour and odour from batch to batch.

\*Tested using JSW 110 ton injection molding machine; Barrel Temperature set at 185 °C – 195 °C.

# フードコンタクトグレード 物性表

Conditions of Use		For Repeat Use at All Conditions of Use		For Repeat Use at Room Temperature or Below		As Replacement of Single-Use Plastic
Properties	Test Method	TEXα® E2741	TEXα® P2250	TEXα® E2623T	TEXα® E2632T	TEXα® E2341S
Base Polymer	-	PP	PP	PP	PP	PP
Surface Appearance	-	Particulate Texture	Fibrous Textured	Non-Textured	Non-Textured	Particulate Texture
Colour	-	Beige	Beige	Beige	Beige	Beige
Biobased Carbon Content (%)	ASTM D6866	35	37	28	28	35
Density (g/cm <sup>3</sup> )	ASTM D792	1.1	1.1	1.1	1.1	1.1
Mould Shrinkage (%)	In-House Method	0.6-0.8	0.4-0.6	0.8-1.0	0.9-1.1	0.6-0.8
Spiral Flow Length* (cm)	In-House Method	26	27	28	34	26
MFI @ 230°C/2.16kg (g/cm)	ASTM D1238	12	-	10	18	12
Flexural Strength (MPa)	ASTM D790	35	45	15	27	35
Flexural Modulus (MPa)	ASTM D790	1700	2200	600	1100	1682
Notched Impact Strength (J/m)	ASTM D256	45	100	80	47	40
HDT @ 0.455 MPa (°C)	ASTM D648	107	138	60	95	105
Recommended Application		Tableware, Food Container, Infant Products	Tableware, Food Container, Infant Products.	For applications which requires good ductility e.g. Toothbrush, Shaver, Lid, Cosmetic Casing.	Over-moulded Tableware, Food Tray, Storage Container, Toy, Chopping Board.	For replacement of single-use Tableware and Food Container.
US FDA & EU Food Contact Compliances		<ul style="list-style-type: none"> <li>US FDA 21CFR 176.170(c) (Table 2) Migration Test: All food types under Conditions of Use from A through H</li> <li>EU 10/2011 Overall Migration for Repeated Use Articles</li> <li>Japan Food Sanitation Act</li> </ul>		<ul style="list-style-type: none"> <li>US FDA 21CFR 176.170(c) (Table 2) Migration Test: All food types under Conditions of Use from E through H</li> <li>EU 10/2011 Overall Migration for Repeated Use Articles</li> </ul>		<ul style="list-style-type: none"> <li>US FDA 21CFR 176.170(c) (Table 2) Migration Test: All food types under Conditions of Use from A through H</li> <li>EU 10/2011 Overall Migration for Single Use Articles</li> </ul>
General Compliance/ Features		<ul style="list-style-type: none"> <li>Comply with US FDA 21 CFR 177.1520 Extraction Test</li> <li>EU10/2011 Specific Migration for Repeated Use Articles</li> <li>REACH &amp; RoHS Compliance</li> <li>BPA &amp; Phthalates Free</li> <li>Colorable</li> <li>Recyclable</li> <li>Able to blend with virgin/recycled PP</li> </ul>				
Intellectual Property (IP)		These biobased materials have been granted patent in US, UK, Germany, Italy, France, Australia, Japan, Taiwan, Hong Kong, Singapore, The Philippines and Malaysia.				

## Note:

The stated values are typical values only and shall not to be construed as specification limits. Users should confirm results by their own tests. As TEXα® is made from natural material, there may be variation in colour and odour from batch to batch.

\*Tested using JSW 110 ton injection molding machine; Barrel Temperature set at 185 °C – 195°C.

## 製造元



# TEXCHEM

TEXCHEM POLYMERS SDN BHD

No. 1465, Mukim 11, Lorong Perusahaan Maju 6,  
Prai Industrial Estate, Phase 4, 13600 Prai,  
Penang, Malaysia.

## お問い合わせ先



# 巴工業株式会社

化学品本部 開発部  
東京都品川区北品川五丁目5番15号  
TEL : 03-3442-5147  
Email : [gd@tomo-e.co.jp](mailto:gd@tomo-e.co.jp)