

BIOflex® FL is a 15 oz. matte finish, strong, indoor/outdoor, front-lit, biodegradable banner/billboard material for UV, solvent or scree-printing. Very similar in all around performance to Ultima Supreme, BIOflex has one major difference; in landfill conditions (darkness, high heat, moisture and lack of oxygen), it attracts microbes that break down the PVC within 3 to 5 years. BIOflex contains no toxic materials and is tear, fade and fungus resistant. Widths range from 54" -196".

PVC has a remarkable balance of properties; it is strong, resistant to oil, chemicals, sunlight and weather. PVC is also flame resistant, easily decorated and low in cost. At one time, PVC was often formulated with little regard for avoidance of toxic ingredients. This is no longer true. BIOflex PVC contains no toxic materials. It is composed of pure PVC resin, fine particle limestone to provide opacity, plasticizer of vegetable origin to provide flexibility and the titanium pigment used in high quality paints to add sunlight resistance. More than 80% of the content of BIOflex is derived from sources other than petroleum.

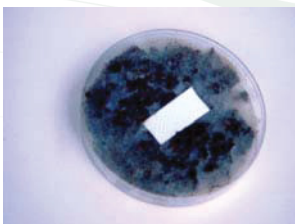
Before BIOflex, PVC had been immortal in the landfill; no degradation was found after decades of landfill burial. When degradable materials, such as starch, were added, they were consumed in the landfill but the PVC itself was untouched. Ultraflex Systems has developed a nontoxic formula that, at very low levels, enables landfill decomposition of BIOflex PVC. BIOflex has been engineered to be the first truly environmentally friendly, biodegradable PVC. Worldwide patents covering the BIOflex composition are pending.

In the landfill, the carbon and hydrogen content of BIOflex are partly consumed by the biomass organisms and partly released as methane from fermentation. In a well managed landfill, methane is harvested for use as fuel. The chlorine content of BIOflex is partly consumed and partly converted to soluble chloride, this has value as fertilizer since it makes soil nitrogen more rapidly available to plants. In experiments using landfill into which BIOflex had decomposed as compost in potting soil, plants and vegetables sprouted more rapidly than in controls.

## Product Features

- *In properly controlled landfills BIOflex PVC will vanish in 3 to 5 years*
- *80% of the content is derived from sources other than petroleum*
- *Formula is non-toxic*
- *Contains no heavy metals, pesticides, bleaching agents, DOP or similar plasticizers, glycol ether or carcinogenic coloring agents*
- *Tear and fade resistant*
- *Can be RF and heat welded*
- *Fire certified for NY MEA; NFPA701 and CA Fire Marshal Title 19 test*
- *Patent Pending*

*Standard PVC vinyl that has been in a landfill for 30 days.*



*BIOflex PVC vinyl that has been in a landfill for 30 days.*



## CERTIFIED TESTING

In an ISO 13641 study by an independent testing laboratory, addition of BIOflex to a landfill not only did not inhibit, but actually increased the level of biological activity. This ISO test is designed to ensure that materials added to a landfill do not release toxic substances. BIOflex begins to degrade in the landfill within a few weeks and depending on thickness and quantity added, the PVC will vanish in 3 to 5 years. It should be noted that landfills can be managed by control of temperature and moisture content so as to increase the level of biological activity.

## MATERIAL DETAILS

CHARACTERISTICS	TEST METHOD	METRIC	ENGLISH
Support Cloth	DIN ISO 2076	Polyester	Polyester
Yarn dtex	DIN EN ISO 2060	1100 x 1100 dtex	1000 x 1000 denier
Type of Coating	N/A	PVC	PVC
Total Weight	DIN EN ISO 2286-2	510 g/m <sup>2</sup>	15 oz/yd <sup>2</sup>
Tensile Strength	DIN EN ISO 1421	2400/2200 N/5cm	274/251 lbs/inch
Tear Strength (warp/weft)	DIN 53363	250/250 N	56/56 lbs
Flame Resistance	DIN 75200	NFPA701, CA Fire Marshall, NYC (MEA)	
Low Temperature (No Crack at:)	ISO 1876	Low at -18°C	Low at -0°F
RF Weldable (Heat Sealable)	DIN 53354	Yes	Yes
Fungus Resistant	ASTM G21	Treated	

