



Determining the Type of Plastic Film



Determining the type of plastic film





Plastic bags are made out of "film", or thin flexible sheets of plastic. Plastic film is typically defined as any plastic less than 10 mm thick. The majority of plastic films are made from polyethylene resin and are readily recyclable if the material is clean, dry, and not pigmented black.

The resin coding system was originally intended for rigid plastic containers only. However, many manufacturers are now putting the code on plastic films too. Check out www.plasticsresource.com for more information about plastics recycling, resin codes, and other types of plastic. If no resin code is printed on the plastic film or bag, the film's application may indicate the resin type since different resins are chosen for their unique performance (examples below). Also observe the plastic film's characteristics and appearance and compare to the descriptions below.

Note: If you choose to test the burn characteristics, it should only be done by an adult outside with extreme caution, using a small sample, burning only one corner with a lighter or match.






Mixing Plastic Film Types:

Many buyers, or end users, accept a mixture of LDPE, LLDPE, HDPE, and MDPE. It is VERY important that you check your buyer's specifications. A big challenge in recycling is accumulating enough material to efficiently transport it to market. Combining compatible material is one way to improve efficiency.

<p>1. Identify which types of plastic scrap film your business generates</p> <p>2. Estimate the volume of each type of film you produce (see table to the right)</p> <p>3. Identify where each type of plastic film is generated (ex. shipping docks)</p>	<p>Volume Table (ex. 2,800 lbs. = 2.4 tons)</p> <table border="0"> <tr> <td>.1 tons = 200 lbs.</td> <td>.6 tons = 1,200 lbs.</td> </tr> <tr> <td>.2 tons = 400 lbs.</td> <td>.7 tons = 1,400 lbs.</td> </tr> <tr> <td>.3 tons = 600 lbs.</td> <td>.8 tons = 1,600 lbs.</td> </tr> <tr> <td>.4 tons = 800 lbs.</td> <td>.9 lbs. = 1,800 lbs.</td> </tr> <tr> <td>.5 tons = 1,000 lbs.</td> <td>1 ton = 2,000 lbs.</td> </tr> </table>		.1 tons = 200 lbs.	.6 tons = 1,200 lbs.	.2 tons = 400 lbs.	.7 tons = 1,400 lbs.	.3 tons = 600 lbs.	.8 tons = 1,600 lbs.	.4 tons = 800 lbs.	.9 lbs. = 1,800 lbs.	.5 tons = 1,000 lbs.	1 ton = 2,000 lbs.
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<p> LDPE#4 - Low Density Polyethylene (unpigmented films have high clarity, moderate stretch & strength characteristics, smells like a candle if burned)</p> <ul style="list-style-type: none"> • Bags (e.g., thicker newspaper bags, bread bags) • Bubble wrap <p>Note: Bubble wrap recycling can be very difficult without local markets due to shipping constraints.</p>	<p>Generate?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p>	<p>Estimated volume:</p> <p>_____ tons</p>										
<p>Where is the scrap plastic film generated:</p> <p>_____</p> <p>_____</p> <p>_____</p>												
<p> LLDPE#4 - Linear Low Density Polyethylene (unpigmented films have moderate clarity, slightly tacky feel to the touch, stretchy, smells like a candle if burned)</p> <ul style="list-style-type: none"> • Stretch wrap • Bags (e.g. clear, thin newspaper bags) • Dry cleaning film • Agricultural films (silage bags, greenhouse films, wraps for hay bales) <p>Note: Because agricultural films often come in contact with the ground or most farm products, many recyclers currently reject this material due to contamination. Chemicals and paint used for UV protection are other contaminants often found on agricultural films.</p>	<p>Generate?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p>	<p>Estimated volume:</p> <p>_____ tons</p>										
<p>Where is the scrap plastic film generated:</p> <p>_____</p> <p>_____</p> <p>_____</p>												
<p> MDPE#4 - Medium Density Polyethylene (unpigmented films have moderate clarity, poor stretch and strength characteristics, smells like candle and will strand when burned)</p> <ul style="list-style-type: none"> • Consumer paper packaging (i.e. toilet paper, paper towel) <p>Note: MDPE is a variation on the production of LDPE and is often labeled #4. It's generally used as an alternative to other resins in film applications where strength is not required.</p>	<p>Generate?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p>	<p>Estimated volume:</p> <p>_____ tons</p>										
<p>Where is the scrap plastic film generated:</p> <p>_____</p> <p>_____</p> <p>_____</p>												
<p> HDPE#2 - High Density Polyethylene (unpigmented films have some opacity, crinkle to the touch, low stretch, can tear easily, high strength, smells like a candle if burned)</p> <ul style="list-style-type: none"> • Most grocery bags • T-shirt bags • Bags with sealed air for packaging (e.g., air cushion) <p>Note: Puncture to remove air</p>	<p>Generate?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p>	<p>Estimated volume:</p> <p>_____ tons</p>										
<p>Where is the scrap plastic film generated:</p> <p>_____</p> <p>_____</p> <p>_____</p>												

Non-Polyethylene Plastic Film Types



#2 and #4 plastic films are more readily recyclable than the plastic films listed below, which are considered contaminants in loads of polyethylene. Markets are more limited but may exist.

 <p>PP#5 (high strength, smells like sweet wood if burned)</p> <ul style="list-style-type: none"> • Most woven bags or tarp 	<p>Generate? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Estimated volume: _____ tons</p>
<p>Where is the scrap plastic film generated:</p>		
 <p>OPP#5 (oriented PP) (unpigmented plastic films have high clarity, fairly stiff, crinkles to touch, tends to return to original shape, smells like rosewood if burned)</p> <ul style="list-style-type: none"> • Garment bags • Textile packaging • Cigarette overwrap • Potato chip bags <p>Note: These plastic films are difficult to discern from PE films, except by texture and burn testing.</p>	<p>Generate? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Estimated volume: _____ tons</p>
<p>Where is the scrap plastic film generated:</p>		
 <p>Co-extruded Polyethylene Film (LDPE/HDPE)#7 (high strength from HDPE, smooth, flexible surface with high printability from LDPE; woven texture is apparent, but surface is smooth; often different color on opposite sides)</p> <ul style="list-style-type: none"> • Woven lumber wraps • Mailing pouches and bank bags 	<p>Generate? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Estimated volume: _____ tons</p>
<p>Where is the scrap plastic film generated:</p>		
 <p>Cross-linked PE#7 (no stretch, high strength, difficult to tear, crinkles to the touch, yellowish hue when crumpled)</p> <ul style="list-style-type: none"> • Industrial film applications <p>Note: Cross-linked polyethylene plastic films are films that have been altered on a molecular level in order to significantly improve strength. Cross-linked plastic films cannot be re-melted and therefore are non-recyclable.</p>	<p>Generate? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Estimated volume: _____ tons</p>
<p>Where is the scrap plastic film generated:</p>		
 <p>PVC#3 (Won't stay lit if burned, do NOT smell! Dissolves when touched with solvent based glues)</p> <ul style="list-style-type: none"> • Food contact packaging (especially frozen foods due to its low oxygen permeability and cold temperature performance) • Food wrap or cling wrap <p>Note: Food wrap (e.g., Saran Wrap) is increasingly being made from polyethylene resin instead of PVC. Do not recycle any food contaminated plastic film even if it is polyethylene.</p>	<p>Generate? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Estimated volume: _____ tons</p>
<p>Where is the scrap plastic film generated:</p>		

Continued on next page

Non-Polyethylene Film Plastics (continued)

Worksheet 1

 <p>Nylon#7 (typically thick, high strength plastic films)</p> <ul style="list-style-type: none"> • Food contact packaging (e.g., soup pouches or seafood packaging) <p>Note: Most plastic films with food contact are not recyclable due to residue.</p>	<p>Generate?</p> <input type="checkbox"/> Yes <input type="checkbox"/> No	<p>Estimated volume:</p> <p>_____ tons</p>
<p>Where is the scrap plastic film generated:</p> <p>_____</p> <p>_____</p> <p>_____</p>		
 <p>PS#6 (crinkles to touch, emits very distinct black smoke if burned - don't smell!)</p> <ul style="list-style-type: none"> • Carrier sheets or other manufacturing materials <p>Note: Since they are crisper (less flexible) than most other plastic films they may be classified as rigid sheet rather than plastic films.</p>	<p>Generate?</p> <input type="checkbox"/> Yes <input type="checkbox"/> No	<p>Estimated volume:</p> <p>_____ tons</p>
<p>Where is the scrap plastic film generated:</p> <p>_____</p> <p>_____</p> <p>_____</p>		

If you cannot determine the film type on your own, try contacting the supplier or manufacturer for more product information.

Check out www.plasticresource.com for more information about plastics recycling, resin codes, and other types of plastic.