



v.1.0 beta

Polyethylene Terephthalate - PET (beta Scorecard)

Plastics Scorecard (v.1.0 beta) -- Polyethylene Terephthalate (PET)

Maximum Attainable Grade:† C-

Grade Range: F to C-

Comments:

The attribute affecting PET's grade is its use of antimony trioxide as a catalyst. Antimony trioxide is listed under California Proposition 65 as a suspected carcinogen. This makes it a "red" chemical in the Green Screen rating system.

Life Cycle Stage	Attribute	Grade	Comments
1 Feedstock Production			
	1.a Pesticide Use	not applicable	
	1.b GMO Use	not applicable	
	1.c Sustainable Agriculture Practices	not applicable	
	1.d Post-Consumer Recycled (PCR) Content (<i>fossil fuels only</i>)	C- to A-	Grade depends on % post-consumer recycled content. Increased post-consumer content lowers the fossil fuel penalty and improves the Grade.
Grade range for Feedstock Production:* C- to A-			
2 Manufacturing			
	2.a Primary + Intermediate Chemicals	B-	Paraxylene + Ethylene Glycol = Green Screen "Orange" chemicals
	2.b Monomer	A+	BHET (CAS# 959-26-2) = Green Screen "Yellow"
	2.c Catalysts	C-	Antimony trioxide = Green Screen "Red" chemical
	2.d Additives	F to A+	Grade depends on additives used
	2.e Nanomaterials	C- to A+	Depends on whether nanomaterials are used in the product
Grade range for Manufacturing:* F to C-			
3 Use and End of Life			
	3.a Chemical Releases & Breakdown Byproducts	F (likely) to A+	Given that PET contains antimony trioxide as a catalyst, PET would likely receive a Grade F if antimony trioxide is released during recycling or incineration.
	3.b Single Use Biobased Plastic Products	not applicable	
Grade range for Use and End of Life:* F to A+			

† The "maximum attainable grade" for a plastic is determined by the lowest grade it receives for any single attribute.

*The "best possible grade" for a stage is determined by the lowest grade attainable for any criterion for that stage.

It is important to note that these are draft assessments, since they are based on a beta version of the Scorecard and are likely to change with the finalization of v.1.0.