

Durability: flammability	
Flammability	Highly flammable

Durability: fluids and sunlight

Water (fresh)	Excellent
Water (salt)	Excellent
Weak acids	Acceptable
Strong acids	Unacceptable
Weak alkalis	Excellent
Strong alkalis	Excellent
Organic solvents	Acceptable
UV radiation (sunlight)	Poor
Oxidation at 500C	Unacceptable

Primary material production: energy, CO2 and water

Embodied energy, primary production	* 90.6	- 100	MJ/kg
CO2 footprint, primary production	* 4.33	- 4.79	kg/kg
Water usage	* 240	- 265	l/kg

Material processing: energy

Polymer extrusion energy	* 5.7	- 6.3	MJ/kg
Polymer molding energy	* 15.2	- 16.8	MJ/kg
Coarse machining energy (per unit wt removed)	* 1.22	- 1.35	MJ/kg
Fine machining energy (per unit wt removed)	* 7.96	- 8.8	MJ/kg
Grinding energy (per unit wt removed)	* 15.5	- 17.1	MJ/kg

Material processing: CO2 footprint

Polymer extrusion CO2	* 0.427	- 0.472	kg/kg
Polymer molding CO2	* 1.14	- 1.26	kg/kg
Coarse machining CO2 (per unit wt removed)	* 0.0918	- 0.101	kg/kg
Fine machining CO2 (per unit wt removed)	* 0.597	- 0.66	kg/kg
Grinding CO2 (per unit wt removed)	* 1.16	- 1.28	kg/kg

Material recycling: energy, CO2 and recycle fraction

Recycle	✓		
Embodied energy, recycling	* 30.7	- 34	MJ/kg
CO2 footprint, recycling	* 1.47	- 1.63	kg/kg
Recycle fraction in current supply	0.1		%
Downcycle	✓		
Combust for energy recovery	✓		
Heat of combustion (net)	* 15.8	- 16.6	MJ/kg
Combustion CO2	* 1.45	- 1.52	kg/kg
Landfill	✓		
Biodegrade	✗		
A renewable resource?	✗		

Notes

Typical uses

Bearings; Gears; Electrical kettles; Snap-fit components; Chemical pumps; Bathroom scales; Pulley wheels; Domestic appliance housings; Shower heads; Fuel expansion tanks; Toys.

Warning

Compressive strength quoted at 10% strain. Not resistant to phenols. Degraded by contact with zinc ions. Very rapidly attacked by nitric acid. Decomposes explosively if processed with halogens.

Other notes

Endurance limit tested at 10 Hz