

# kg Polymethyl methacrylate (PMMA)

Polymethyl methacrylate (PMMA) is a transparent thermoplastic that is light-weight has a good tensile strength, flexural strength and UV tolerance. It is commonly known as plexiglass, acrylic or acrylic glass.

PMMA is made by polymerising monomers of methyl-methacrylate. It is moulded or extruded into its final shape, which is often flat sheets. Common additives include acrylate monomers for heat processing, butyl acrylate for impact strength, dyes for colouring and ultraviolet resistance and fillers to reduce cost.

PMMA is most often used in construction as a substitute to glass.

**Category** *Plastics*  
**Type** *Other polymers*  
**Functional unit** *kg*  
**Specific heat** *1.5 J/(kg-K)*  
**Density** *1 190 kg/m<sup>3</sup>*

**Common uses**  
*Skylights, flat glazing, sound walls, bathtubs*

**Process name**  
*Polymethyl methacrylate, sheet, at plant/RER U/AusSD U*

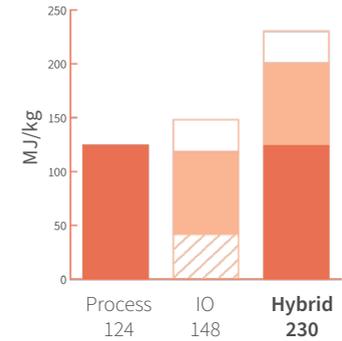
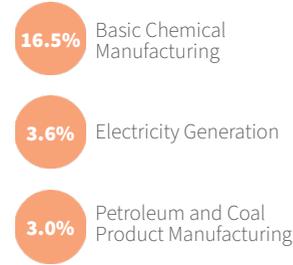
**Input-output sector**  
*Polymer Product Manufacturing*

**Further information**  
[doi.org/10.26188/5da556a82dd9d](https://doi.org/10.26188/5da556a82dd9d)

### Material variations

	Unit	Energy (MJ/unit)	Water (L/unit)	GHG emissions (kgCO <sub>2</sub> e/unit)
<i>Polymethyl methacrylate (PMMA)</i>	kg	230	215	15.4
PMMA sheet - 3 mm	m <sup>2</sup>	822	768	54.9
PMMA sheet - 4 mm	m <sup>2</sup>	1 096	1 023	73.2
PMMA sheet - 5 mm	m <sup>2</sup>	1 370	1 279	91.4
PMMA sheet - 6 mm	m <sup>2</sup>	1 644	1 535	110
PMMA sheet - 8 mm	m <sup>2</sup>	2 192	2 047	146
PMMA sheet - 10 mm	m <sup>2</sup>	2 740	2 558	183

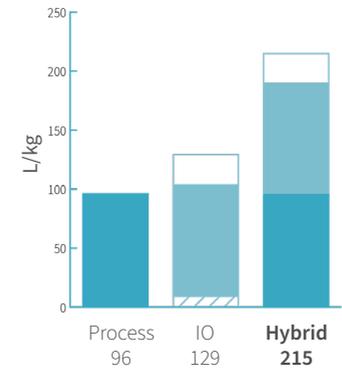
### TOP THREE INPUTS



### ENERGY



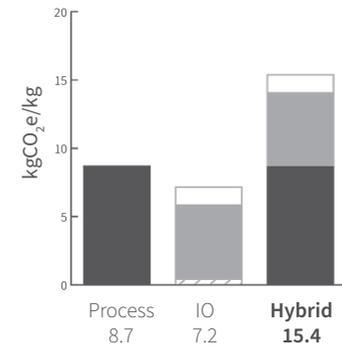
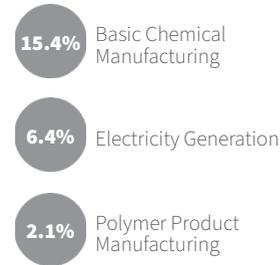
### TOP THREE INPUTS



### WATER



### TOP THREE INPUTS



### GREENHOUSE GAS EMISSIONS

