kg Solvent-based paint

Paint is used to protect surfaces from moisture, UV and wear. It can protective coating for timber, metals, plastics and plaster products. There are two main types of paint: water-based paint (including waterborne acrylics, and acrylic latex paints) and solvent-based paint (also known as alkyd or oil-based enamel paints).

Paint is produced by combining resin, solvents, pigment, and additives. Resins are used to bind together the ingredients. For solvent-based paint these include: dammar, mastic, copal and alkyd resin. Pigments are added to create colour and sheen, and can include calcium carbonate, talc, oxides and mica amongst others. Solvents such as mineral spirits or turpentine are used to dilute and thin the paint. Other additives are included to reduce drying time and give the paint particular properties.

Solvent-based paints are becoming less common, due to the high levels of volatile organic compounds (VOCs) present. Paints with high levels of VOCs are toxic to the environment, have a harsh odour and can be dangerous to inhale. Solvent-based paints are cheaper and tougher than the water-based alternative, and are commonly used in high-traffic areas (although they are more susceptible to UV deterioration). They are more abrasion resistant and have a more brilliant gloss, with a smooth finish. They are difficult to clean, and require mineral turpentine, rather than water.

Category *Miscellaneous*

Type *Paint*

Functional unit *kg*

Density *1 200 kg/m^3*

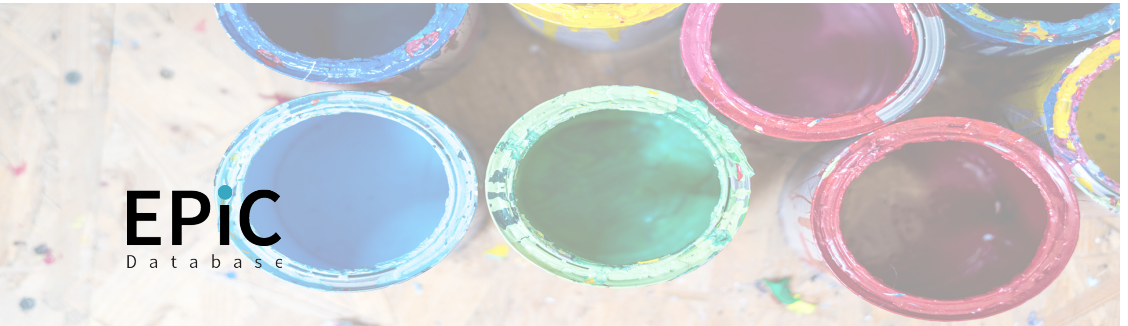
Common uses
Exterior and internal finishes, sealant, weatherproofing

Process name
Alkyd paint, white, 60% in solvent, at plant/RER U/AusSD U

Input-output sector
Polymer Product Manufacturing

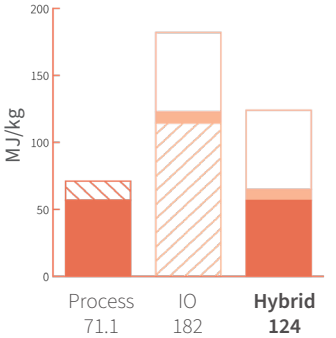
Further information
doi.org/10.26188/5da557baa95ce

Material variations	Unit	Energy (MJ/unit)	Water (L/unit)	GHG emissions ($kgCO_2e$/unit)
Solvent-based paint	*kg*	*124*	*197*	*6.3*
Solvent-based paint - per m^2	m^2	9.3	14.7	0.5



TOP THREE INPUTS

- 3.5% Road Transport
- 1.0% Wholesale Trade
- 0.9% Air and Space Transport

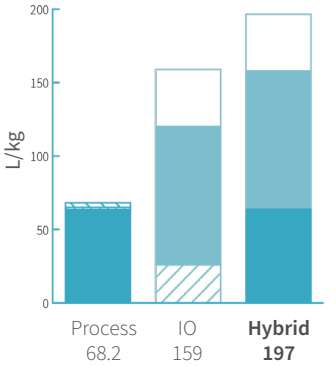


ENERGY

124 MJ/kg

TOP THREE INPUTS

- 22.3% Other Agriculture
- 1.7% Wholesale Trade
- 1.3% Textile Product Manufacturing

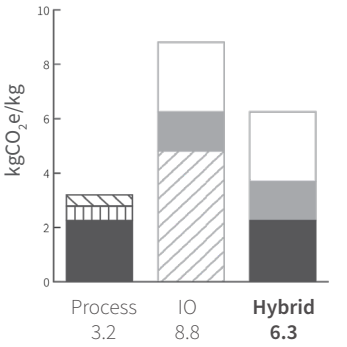


WATER

197 L/kg

TOP THREE INPUTS

- 2.4% Road Transport
- 1.8% Wholesale Trade
- 1.1% Other Agriculture



GREENHOUSE GAS EMISSIONS

6.3 $kgCO_2e/kg$