



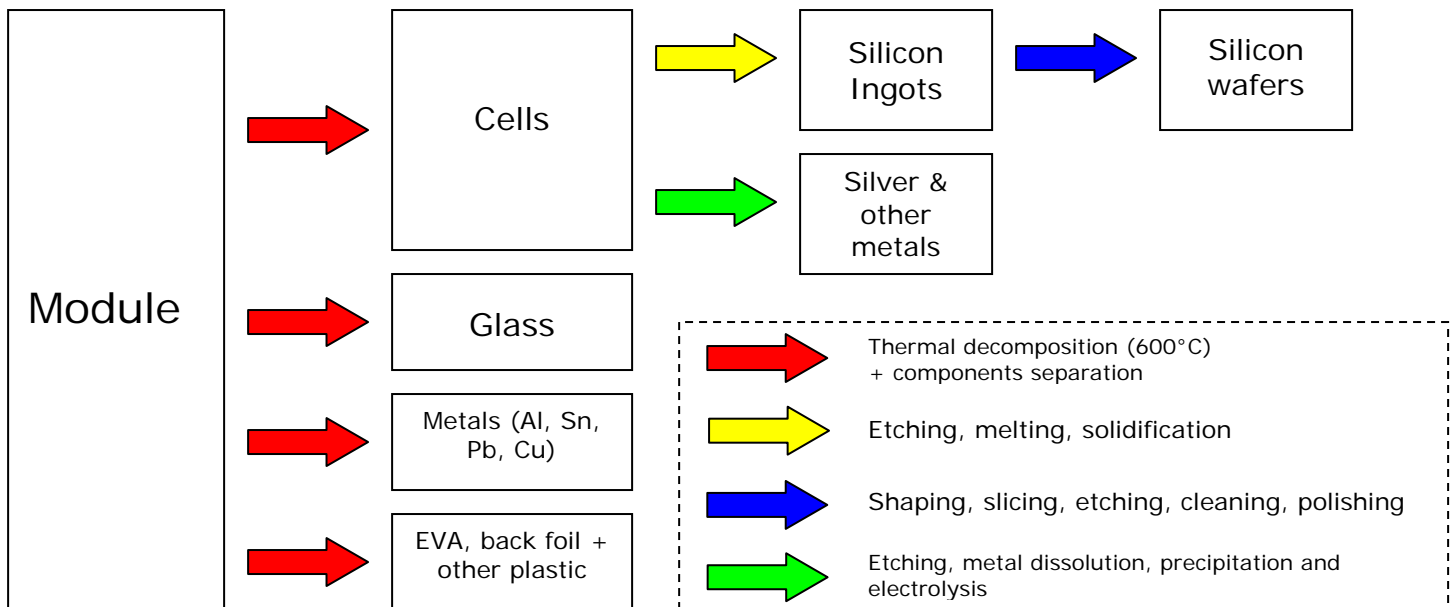
UPSOLAR MODULES - RECYCLING

A. Which components can be recycled?

In the following table are described the different materials used in UPSOLAR modules (ref: UP-M180M), with their weight percentage and the possibility or not to be recycled. Finally, all the modules components are potentially recyclable but due to losses during process about **80% of the module can be recycled**.

Material	Components	Weight %	Recycling solutions
Glass	Front glass	66%	Glass recycling (i.e.: float glass)
Aluminum (Al)	Frame, Ribbons, bus-bars	16%	Metal recycling (by density and sieving)
EVA	Encapsulation	7.5%	Recycling for polymer industry
TPT	Back foil	4%	Recycling for polymer industry
Silicon (Si)	Cells	3.5%	Recycling for wafers production
Copper (Cu)	Cables	0.6%	Metal recycling (by density and sieving)
Other plastic	Junction box, cables	2%	Recycling for polymer industry
Silver (Ag)	Cells	<0.01%	Metal recycling (by density and sieving)
Tin (Sn)	Ribbons, bus-bars	<0.1%	Metal recycling (by density and sieving)
Lead (Pb)	Ribbons, bus-bars	<0.1%	Metal recycling (by density and sieving)

B. Recycling process synthesis:



Upsolar Co., Ltd.
 Technical department – Jul 09

Upsolar Europe S.A.S
 15, Rue du Louvre,
 75001 Paris, France
 Tel: +33 1 83 62 02 00
 Fax: +33 1 83 62 02 01

China: Upsolar Co., Ltd.
 Silver Centre 19F,
 1388 North Shan Xi Rd. Shanghai, China
 Tel: +86 21 6277 5477
 Fax: +86 21 6277 5664

Hong Kong: Upsolar Co., Ltd.
 Rm 907, JSH001, Wing Tuck Comm Centre,
 177-183 Wing Lok Street, Hong Kong
 Tel: +852 2973 8324
 Fax: +852 2111 0693