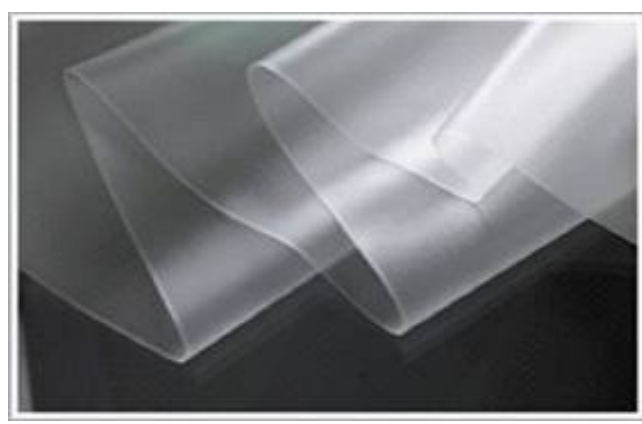
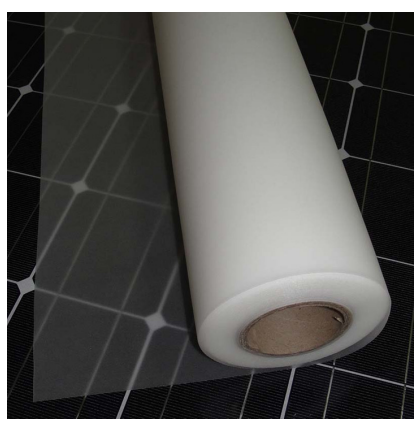
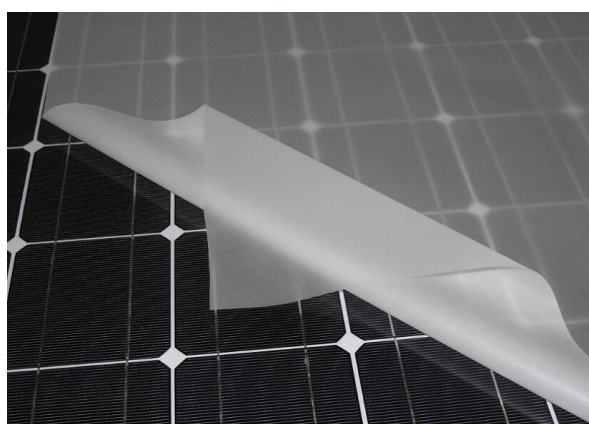


Introduction

Renewable energy is obtained from environmentally friendly natural sources that never run out, but it needs modern technology to turn it into easy to use natural energy...

SIPCHEM is a Saudi joint stock company and one of the leading companies in the private sector which has been forerunner to enter this field through the use of very advanced Japanese technology (Mitsui Chemicals),

SIPCHEM established a new company in partnership with Hanwha Chemical Korean Company at the beginning of 2013 in the city of Hail under the name “Saudi Specialized Products Company” (Wahaj).



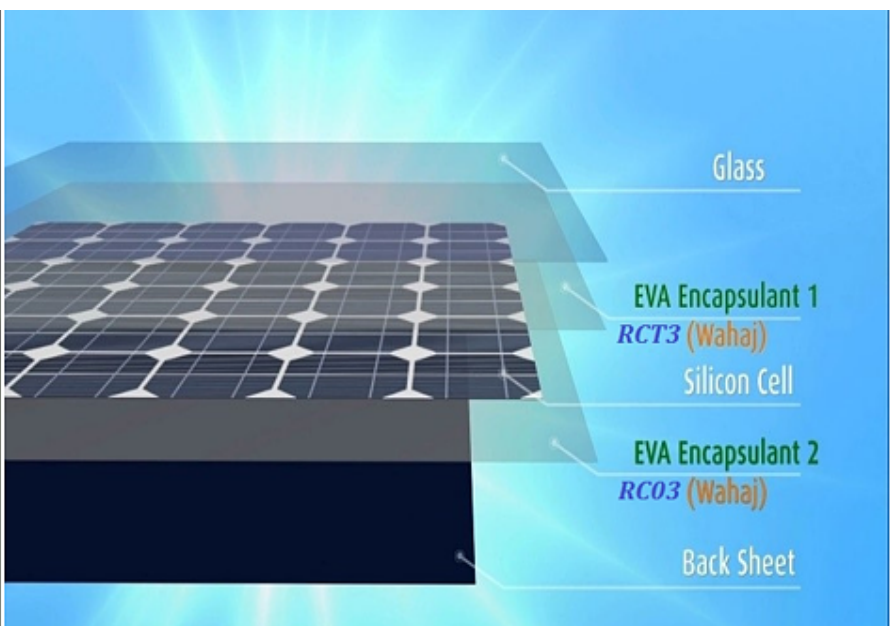
The company started its activity thru the factory (Ethylene Vinyl Acetate Film Encapsulate) in the industrial city of Hail, Kingdom of Saudi Arabia, on a plot with surface area of 40 thousand square meters which is the first of its kind in the region.

The total production capacity of the project is 10 mn SQM per year (Ethylene Vinyl Acetate film encapsulate), which is equivalent to 0.8 GW per year using Japanese technology from Mitsui company which is considered the first in the world in the field of film solar cells.

SSPC (Wahaj) EVA Film industry in 2015. With its focus on continuous R&D on the innovative technology and quality control process, SSPC (Wahaj) has now become one of the largest PV EVA Film material suppliers in GCC solar market.

Our Products of EVA Encapsulants:

- RCT3 is a fast curing PID Resistant Ethylene Vinyl Acetate, having UV Transmittance >70% @ 300nm and Optical Transmittance >91%. This can be used for all crystalline and thin film modules as top layer to the PV solar cells.
- FC is a fast curing PID Resistant Ethylene Vinyl Acetate, having 300nm UV cut-off. This can be used for all crystalline and thin film modules, to be used bottom layer to the PV solar cells.
- WAHAJ UFC is a Ultra-Fast curing PID Resistant Ethylene Vinyl Acetate. This can be used for all crystalline and thin film modules.





SAUDI SPECIALIZED PRODUCTS COMPANY (WAHAJ)

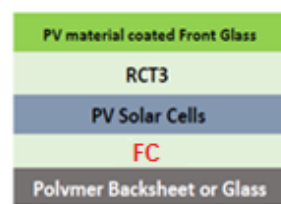
SOLAR EVA FILM

WAHAJ Solar EVA Film Description

Fast curing type that required one step process, cross linking is completed at only lamination process

FC	Fast Cure	UV-cut	PID Durable
RCT3		High UV transmittance	
UFC	Ultra-Fast Cure	UV-cut	PID Durable

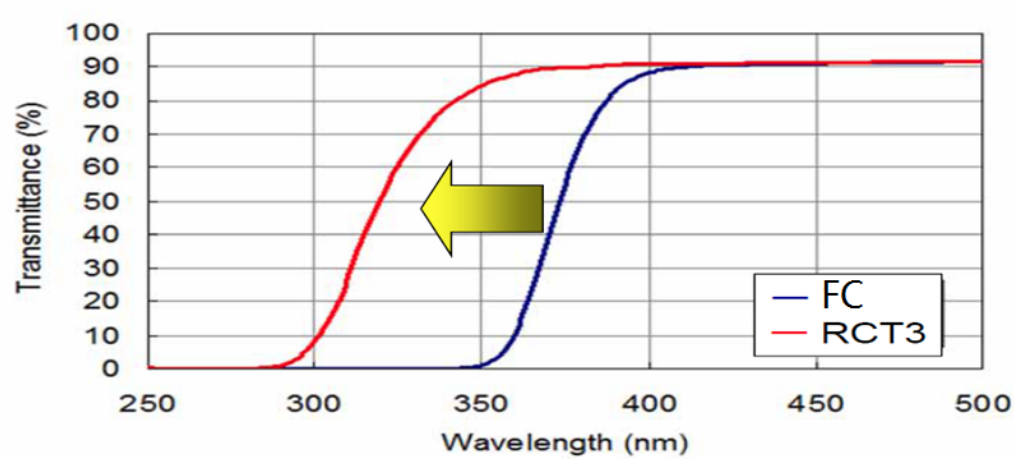
Properties	Unit	Solar EVA™ FC/RCT3
Melting Point	°C	71
Density	g/cm³	950
Transmittance	%	92
Yellowness Index (YI)	-	0.5
Adhesive strength	N/cm	19
Adhesive strength (with backsheet)	N/cm	110
Young Modulus	MPa	15
Water absorption	%	0.1%
Volume resistivity @ 23°C	Ohm.cm	>=10 ¹⁵



Lamination Condition

	FC	UFC
Temperature (°C)	140-145	145-150
Vacuum (min)	4-6	3-5
Press & Hold (min)	8-11	6-7
Total (min)	12-17	9-12

SSPC solar EVA Film Optical Properties



RCT3 has high transmittance at UV region compared to FC

Solar energy 2 % UP: Pmp (W): 245.2

Higher Volume Resistivity

Lower Water permeation

Higher cross-linking density

Conformable and flexible for ease of lamination

Durable bonding strength with both glass and backsheet

Excellent UV and damp-heat stability

Adhesive Strength

