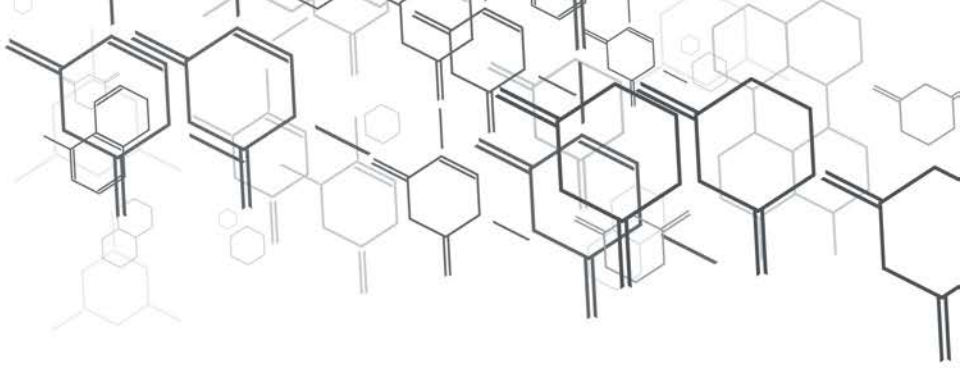
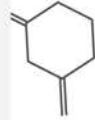


Solution for Solar Collectors



A solar collector absorbs solar radiation and converts it into heat (photo-thermal conversion). A high efficiency solar collector implies maximum absorption of incident solar radiation with a minimum thermal and optical loss.

Vacuum insulation is a key part of an advanced collector, since it suppresses heat losses by gas convection and it also protects the absorber plate and the "heat-pipe" from external adverse conditions for exceptional performance.

There are two main families of solar collectors, for domestic and for industrial applications. SAES Getters has developed specific getter solutions to successfully meet the different requirements of both applications.

Started as a way to provide hot water for residential use, domestic collectors are used also for air conditioning & refrigeration as well as space heating. Typically a vacuum in the range of 10^{-4} Torr is sufficient for domestic solar collectors since the maximum operating temperature of the fluid in the collector is 100°-120°C.

A key issue is the maintenance of vacuum for the lifetime of the collector, which is typically 20 years. In domestic solar collectors an evaporable getter, Ba based, is used. The getter is evaporated in the sealed collector after vacuum processing and a Ba film is created at one of the ends of the collector.

Industrial solar collectors are installed for power generation in solar power stations. The temperature of the fluid inside the collector is in the range of 400-550°C, therefore the need of good vacuum insulation is more stringent. In these collectors, Non Evaporable Getter, St2002 Pieces, St 787 or St777 in conjunction with a small barium ring are used.

Boost your product performance with SAES Getters solutions:

- St2002 Pieces
- St787
- St777

making innovation happen, together

saes
group

neg_technology@saes-group.com
www.saesgetters.com

*This paper contains no confidential information
© 2012 SAES Getters. All rights reserved.*