

Targeting for vinyl acetate case study.

Problem data of vinyl acetate case study is summarized in Table (1) and (2)

Table 1. Sink data for the vinyl acetate

Sink	Flow rate kg/h	Maximum inlet mass fraction	Maximum inlet load (kg/h)
Absorber I	5100	0.05	255
Acid Tower	10200	0.10	1020

Table 2 : Source data for the vinyl acetate

Source	Flow rate kg/h	Inlet mass fraction	Inlet load (kg/h)
Bottoms of Absorber II	1400	0.14	196
Bottoms of primary tower	9100	0.25	2275

The sources and sinks are ranked in ascending order of composition. Next the sink and source composite curves are constructed as shown in Fig. Next the source composite curve is slid horizontally to the right till it touches the sink composite curve. The material reuse pinch diagram is shown in Fig. The targets for minimum fresh water use is found to be 9.6×10^3 kg/hr and minimum waste discharge is 4.8×10^3 kg/hr. The same results are obtained by the source sink mapping diagram also.

VAM Case Study

