

Full concentration on your product



 **System Solutions
for Evaporating Technology**

Areas of Application

API Schmidt-Bretten evaporating systems with **SIGMASTAR**- and **SIGMAVAP** plate evaporators can be found in successful operation in various branches of the food industry, in organic and chemical industries as well as in wastewater treatment.

SIGMASTAR- and **SIGMAVAP** plate evaporators perform successfully on a daily basis handling a diverse range of products (e.g. viscous fluids, purée, mud and liquids with a fouling tendency which cannot be processed by falling film evaporators at all or where the falling film technology is inadequate).

Industry

Fruit juice, fruit purées, plant extracts, vegetable juice, vegetable purées, pectides, gelatins, milk, whey, buttermilk.

Extracts of: malt, coffee, tea, sorghum. Beer wort, cane and beet sugar, liquid-sugar etc.

Chemical and Pharmaceutical Industry

Lye, acids, salt solutions, aluminium sulfates, magnesium sulfates, magnesium chlorides, amines, sorbitols, aromas, raw and interstage products for plastics and synthetic fibres, synthetic stick water, pharmaceutical products and others.

Wastewater Treatment

Treatment of various types of wastewater arising from industry, food production, recycling plants, electroplating, fermentation deposits and mash, et. al.

Industry for Organic Natural Products

Fish stick liquor, skin and bone stick water, protein hydrolysates, technical and photo-gelatines, oils, molasses, yeasts, yeast extracts, worts, extracts from hops, plants, tanning, spring water, glucose, dextrose, fructose, maltose, boiling water (maize, wheat, potato), starches and others.

Technical Versions

Materials and Specifications

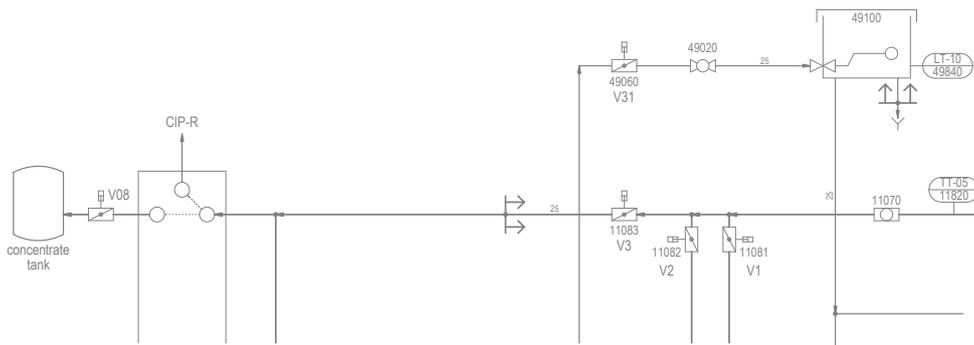
Plate materials:	All prevalent stainless steel, Titanium, Titan Pd, Hastellov*
Gasket materials:	EPDM, NBR, FPM*
Versions:	-1 to 16 bar*
Exchanges Surface:	SIGMAVAP : 0,25 - 3 m ² per plate SIGMASTAR : 0,45 -1,5 m ² per plate
SIGMASTAR Range:	45V, 90V, 150V
SIGMAVAP Range:	26M, 35M, 48M, 66M, 156M

Capacity Data

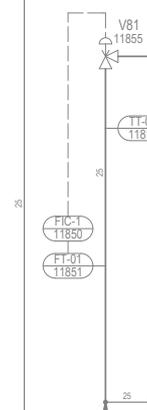
Feed Capacity:	0,5 t/h to 120 t/h
Evaporating Capacity:	500 kg/h to 75000 kg/h
Evaporating:	In excess of 99 % dry substance**
Specific steam consumption:	1.0 to 0.15 kg steam per kg evaporation
Viscosity:	to 2500 mPas**
Heating System:	Direct steam or thermal or mechanical vapor compression

* dependent on design - ** dependent on product

Application Examples



2-stage SIGMASTAR 90V Evaporating Plant
protein hydrolyzate - evaporating capacity 2,000 kg/h



5-stage SIGMASTAR 90V Evaporating Plant with thermal vapour compressor
apple juice - evaporating capacity 20,000 kg/h

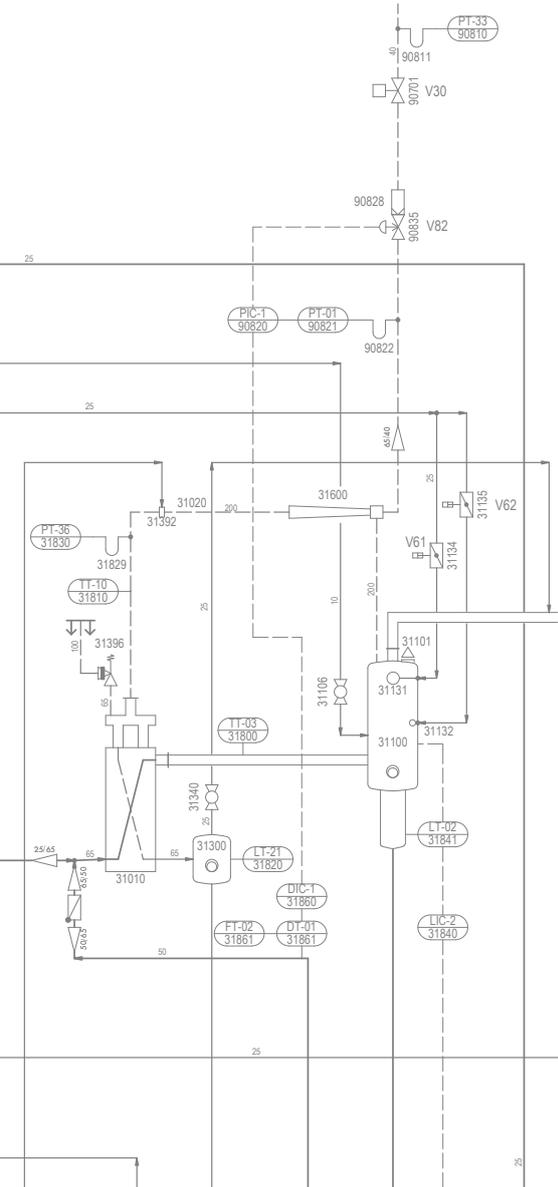
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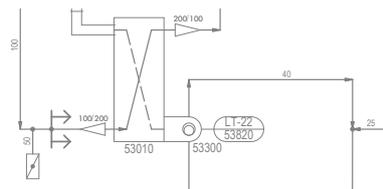
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Application Examples



2-stage SIGMASTAR 90V Evaporating Plant
plant extracts - evaporating capacity 3,000 kg/h



1-stage SIGMAVAP Evaporating Plant
pharmaceutical products -
evaporating capacity 500 kg/h
(ATEX-version)

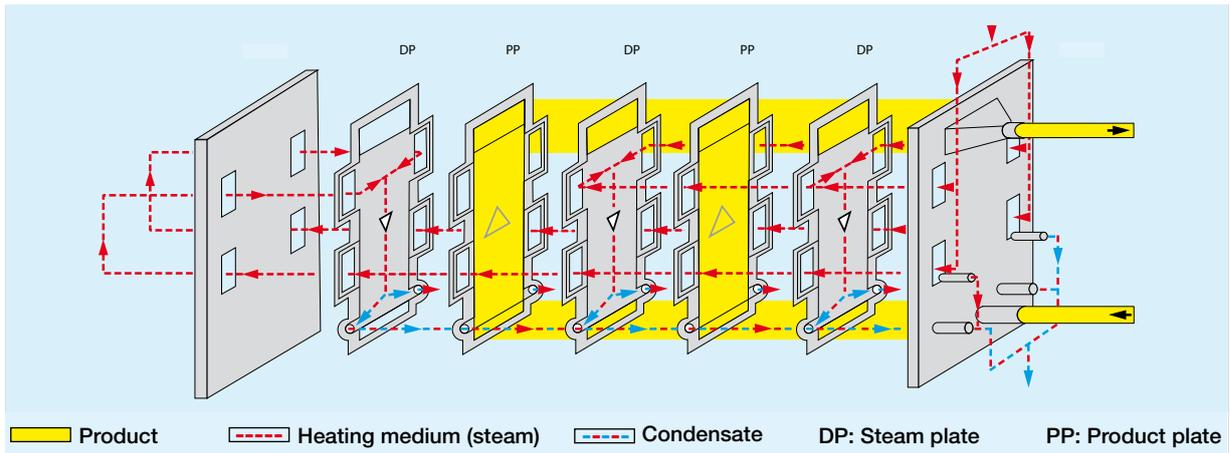


1-stage SIGMAVAP Pilot Plant
various products - evaporating capacity up to 50 kg/h



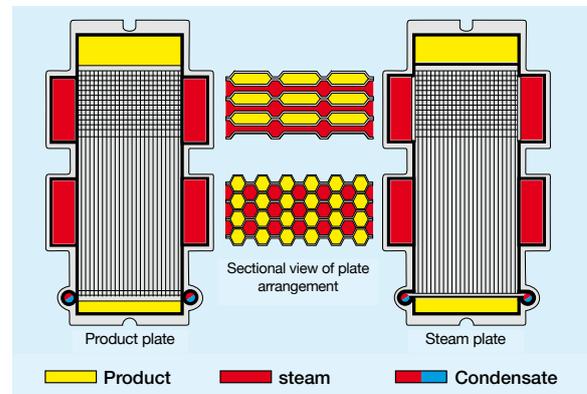
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Frage/Antw.		Gezeichnet von
Einzel-Dimension		Zeichnung Nr./Drawing No.
Berechnung/Description	P&ID Diagramm 1 stufige EDA mit TBV 1-effect evaporator plant with TVR	Blatt/Sheet 1 von/of 1
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Technology

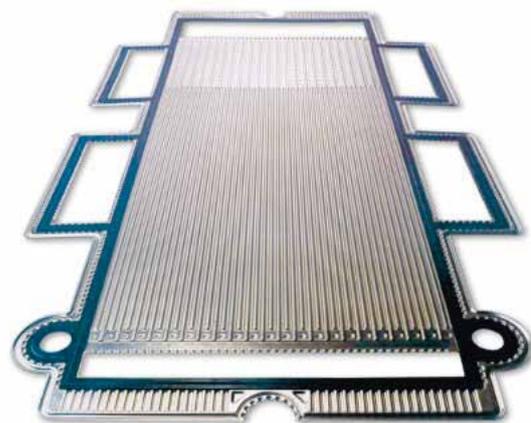


Design of a SIGMASTAR 90V plate evaporator

- Even product distribution based on connecting pipes for various feeders which enable flexible processing and optimizing part loading
- Gentle product handling due to minimised dwelling time achieved by short flow distances and high product velocity
- Minimal pressure loss as a result of accurate cross section measurements
- High speed of rising film vapour achieves highest possible concentration and viscosity
- Clearly defined direction of product avoiding over concentration in any area with a minimal degree of fouling and no product waste
- Low priced heat exchange surfaces in comparison with other evaporating systems



Sectional view of a SIGMASTAR 90V plate arrangement



SIGMASTAR 90V plate



SIGMASTAR 150V plate

- Nothing is welded to the plates which means there is no corrosion and consequently no problems created by fibrous materials
- Capacity is flexible by varying the number of plates. Adaptations and alterations are simply achieved by adding or removing plates

A world of heat transfer solutions

API Heat Transfer's global presence includes manufacturing facilities, R&D locations, and sales support throughout the world, all aimed at one goal – to better serve our customers.



For more information about our heat transfer products, contact our API Heat Transfer sales representative or visit apiheattransfer.com or apiheattransfer.de



Germany

API Schmidt-Bretten GmbH & Co. KG

Langenmorgen 4
75015 Bretten
Germany

+49 7252 530

USA

API Heat Transfer Inc.

2777 Walden Avenue
Buffalo, NY, 14225,
USA

+1 716 684 6700

China

API Heat Transfer Co., Ltd.

Meiheng Building
369 Wuzhong Road,
Minhang District
Shanghai 201 103

+86 5426 2525