



## QUESTIONNAIRE EVAPORATION-TECHNOLOGY

By a complete filled in questionnaire you will help us to evaluate your application and the execution of pilot trials with product in our test center.  
All information submitted will be treated confidentially.

Product / Project : .....

(Key words) .....

Application:             Degassing       Evaporation       Recovery

Must your product or application be treated in strict confidence:     yes                       no

Company's name: .....

Department: .....

Address: .....

Person in charge of the project: .....

Phone no: .....

Fax no: .....

E-mail: .....

Date: .....

Signature: .....

**1. Feed**

- 1.1 Name of product .....
- 1.2 Concentration of highboilers.....in wt.%, concentration of lowboilers.....in wt.%  
For multi-component mixtures indicate composition on the chart "Physical data"  
(refer to page 5).
- 1.3 It is a  solution       emulsion       suspension
- 1.4 Does any precipitation occur during the evaporation process?       yes     no
- 1.5 Is it possible that 2 liquid phases may form?       yes     no
- 1.6 Does the product foam?       yes     no
- 1.7 Does the product form deposits on the heating surface?       yes     no
- 1.8 At what temperature is the product available?      ..... °C
- 1.9 What is the valuable product?       the distillate     the concentrate

**2. Distillate**

- 2.1 Required yield (with regard to the lowboilers.....)
- 2.2 Allowable residual content of highboilers      ..... wt.%  
For multi-component mixtures indicate composition on the chart "Physical data"  
(refer to page 5).
- 2.3 Do you prefer co- or countercurrent flow of the vapor in respect to the highboilers?  
.....

**3. Bottom product**

- 3.1 Required concentration of highboilers      ..... wt.%
- 3.2 Allowable residual content of lowboilers      ..... wt.%  
For multi-component mixtures indicate composition on the chart "Physical data"  
(refer to page 5).
- 3.3 Property of bottom product  
 pure liquid  
 slurry
- 3.4 Is a maximum temperature of the bottom product to be considered? ..... °C

**4. Operating conditions of the planned installation**

4.1 Throughput Feed ..... kg/h, Distillate ..... kg/h, Bottom product ..... kg/h

4.2 Operating hours per day ? .....

4.3 Proposed operating pressure: Vacuum ..... mbar, pressure ..... barg

Type of desired vacuum pump (steam ejector, water ring pump etc.)?  
.....

4.4 Special requirements for the different components e.g. colour, transparency, electric conductivity, odor, etc.)  
.....  
.....

4.5 Available heating medium                      Type ..... Max. temp. .... °C

If saturated steam available, which pressure ..... barg

4.6 Electricity

.....Volt; .....Phases; ..... Cycles

4.7 Cooling water quantity available: ..... m<sup>3</sup>/h

Quality .....

Are fouling factors known? .....m<sup>2</sup>K/W

Temperature in summer ..... °C; in winter ..... °C

**5. General information**

5.1 Please indicate the country resp. operation site of the evaporator:

.....

5.2 Construction material of our standardized evaporators is stainless steel DIN 1.4404 (316L) for parts in contact with product. Does this meet your requirements?  yes  no

If not, which material is recommended .....

5.3 Which materials are suitable for seals/gaskets? .....

5.4 What height is available for the erection of the installation? .....

5.5 Is the existing process  continuous? or  batchwise?

In what type of equipment? .....

Under which conditions? .....

What is the desired improvement? .....

.....

5.6 Do you need  a detailed complete or  budget quotation?

5.7 Is a quotation required for  a complete installation?

for the thin film evaporator only?

5.8 Special remarks .....

.....

.....

**Composition**

Component	Name	Formula	wt. %	Feed	Distillate	Bottom product
A			%			
B			%			
C			%			
D			%			
E			%			

		Unit	Feed	Distillate	Bottom product	Component				
						A	B	C	D	E
Molecular weight		kg/kmol								
Specific weight		kg/m <sup>3</sup>								
Specific heat		kJ/kg K								
Heat conductivity		W/m K								
Viscosity	..... °C	mPas								
	..... °C	mPas								
	..... °C	mPas								
	..... °C	mPas								
Boiling Temperature	1013 mbar	°C								
	500 mbar	°C								
	100 mbar	°C								
	10 mbar	°C								
	1 mbar	°C								
Melting point		°C								
Latent heat	t ..... °C	kJ/kg								
	t ..... °C	kJ/kg								
	t ..... °C	J/kg								

Is the product  non-dangerous  toxic  caustic  inflammable  explosive?

Flash point ..... °C

Ignition temperature ..... °C

Ex-protection .....

Safety data sheet No. for component:

A: .....

B: .....

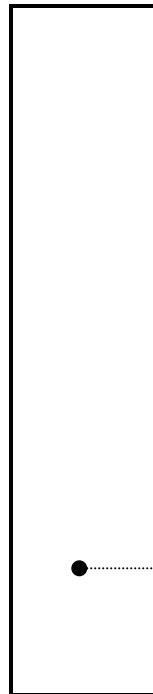
C: .....

D: .....

E: .....

**Process data  
 Evaporation Technology**

Feed	
Designation:	
Throughput	kg/h
Temperature	°C
Boiling temp.	°C
Melting temp.	°C
Composition	
	Gew.-%
	Gew.-%
	Gew.-%
Specific heat	kJ/kgK
Molecular weight	kg/kmol
Viscosity (25 °C)	mPas
Viscosity ( °C)	mPas
Density ( °C)	kg/m <sup>3</sup>



Designation:	
Throughput	kg/h
Temperature	°C
Condensat.temp.	°C
Melting temp.	°C
Composition	
	wt.-%
	wt.-%
	wt.-%
Molecular weight	kg/kmol
Latent heat	kJ/kg
Viscosity (25 °C)	mPas
Viscosity ( °C)	mPas
<b>Vapor</b>	

Heating medium	
Medium:	
Temperature in	°C
Temperature out	°C

<b>Operating pressure</b>	mbara
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Bottom product	
Designation:	
Throughput	kg/h
Temperature	°C
Boiling temp.	°C
Melting temp.	°C
Composition	
	Gew.-%
	Gew.-%
	Gew.-%
Specific heat	kJ/kgK
Molecular weight	kg/kmol
Viscosity (25 °C)	mPas
Viscosity ( °C)	mPas
Density ( °C)	kg/m <sup>3</sup>