

Dryer Questionnaire

Enquire No.	<input type="text"/>		
Company Name	<input type="text"/>		
Address	<input type="text"/>		
Phone / Fax No.	<input type="text"/>	E-mail	<input type="text"/>
Contact Person	<input type="text"/>	Title	<input type="text"/>

Product Information

Application Drying Concentrate Recovery

Name of Product

Parameter	Unit	Solid Matter	Solvent	Other
Name		<input type="text"/>	<input type="text"/>	<input type="text"/>
Chemical Formula		<input type="text"/>	<input type="text"/>	<input type="text"/>
Molecular Weight	Kg/Kg-mole	<input type="text"/>	<input type="text"/>	<input type="text"/>
Specific Weight	Kg/m ³	<input type="text"/>	<input type="text"/>	<input type="text"/>
Specific Heat	KJ/Kg °C	<input type="text"/>	<input type="text"/>	<input type="text"/>
Evaporation Heat	KJ/Kg	<input type="text"/>	<input type="text"/>	<input type="text"/>
Boiling Temperature (1 atmosphere)	°C	<input type="text"/>	<input type="text"/>	<input type="text"/>
Boiling Temperature at <input type="text"/> atm	°C	<input type="text"/>	<input type="text"/>	<input type="text"/>
Melting Point	°C	<input type="text"/>	<input type="text"/>	<input type="text"/>
Decomposition Point	°C	<input type="text"/>	<input type="text"/>	<input type="text"/>
% Weight-in Wet Product	%	<input type="text"/>	<input type="text"/>	<input type="text"/>
% Weight-in Dry Product	%	<input type="text"/>	<input type="text"/>	<input type="text"/>
% Weight-in Vapor	%	<input type="text"/>	<input type="text"/>	<input type="text"/>

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Wet Product Properties

Specific Weight Kg/m³ Bulk Density Kg/m³
Feed Temperature °C PH
Viscosity cP at °C

Form of wet product at inlet:

- Liquid Solution Slurry Pasty Pumpable
 Not pumpable Compact Lumpy Crumbly Sticky
 Powdery Fibrous Granulated Scarcely free Flowing readily free Flowing
 Other

How is moisture bound? Integral % Capillary %

Is a part of moisture water of hydration? Yes No

If yes, insert the percentage: %

At what temperature is chemical bound water released? °C

What is necessary heat to remove this water? KJ/Kg of removed water

Dry Product Properties

Bulk Density Kg/m³ Angle of Response °
Mean Particle Size mm Output Temperature °C
Dry Product Form

Is the dry product hygroscopic? Yes
 No

If yes, please insert
sorption curve:

Sorption Curve

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Drying

Maximum admissible temperature dry solid can be subjected to it during, minute °C

Does the product harden on surface during drying process? Yes No

Is there a viscous phase during drying? Yes No

if yes, at what moisture range? % wt

At what moisture content does the product become free flowing? % wt

Does the product form deposits on the heated surfaces during drying? Yes No

Can the product be plastified if shearing is applied? Yes No

Is the product presently being dried? Yes No

if yes, what is the type of dryer?

1. If Contact Drying

Heating Temperature °C Heating Pressure Bar

Heating Surface m²

2. If Convection Drying

Hot Gas Temperature °C Exhaust Temperature °C

Hot Gas Quantity Kg/h

3. If Continuous Drying

Wet Product Feed Rate Kg/h Residence time Hour

Metering method to dryer

4. If Batch Drying

Batch Wet Product Kg Batch Time/Cycle Time Hour

What are the problems

Dryer Questionnaire

Design Condition

What is the process step preceding the dryer operation?

If the preceding process is continuous, what is the feed rate of wet product? Kg/h

If the preceding process is batch, what is the amount wet product per batch? Kg

Time intervals in which a batch supplied to dryer: Hour

Daily Operation Time 8 h 16 h 24 h

Working Days per Week 5 days 7 days days

Operation Hours per Year Hours

Construction Material

In contact with wet product

In contact with vapor

In contact with dry product

Suitable gasket material

Utilities

Electricity Volts Hz Phase

Fuel Gas Type Heating Value KJ/m³

Fuel Oil Type Heating Value KJ/Kg

Steam Pressure Bar Temperature °C

Alternate Steam Pressure Bar Temperature °C

Thermal Oil Temp. °C Quantity m³/h

Hot Water Temp. °C Quantity m³/h

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Cooling Water	Temp.	<input type="text"/>	°C	Quantity	<input type="text"/>	m ³ /h
Brine	Temp.	<input type="text"/>	°C	Quantity	<input type="text"/>	m ³ /h
Hot Gas	Temp.	<input type="text"/>	°C	Quantity	<input type="text"/>	m ³ /h
				Moisture	<input type="text"/>	%
Compressed Air	Pressure	<input type="text"/>	Bar	Dew Point	<input type="text"/>	°C
Instrument Air	Pressure	<input type="text"/>	Bar	Dew Point	<input type="text"/>	°C

Trial and Analysis

Can wet product be made available for pilot test? Yes No

Can dried product be rewetted to obtain a representative wet product? Yes No

Moisture Analysis

Atmospheric Oven	<input type="text"/>	°C	Pressure	<input type="text"/>	bar	Sample Weight	<input type="text"/>	g
Vacuum Oven	<input type="text"/>	°C	Pressure	<input type="text"/>	bar	Sample Weight	<input type="text"/>	g
Infrared Balance	<input type="text"/>	°C	Sample Weight	<input type="text"/>	g	Layer	<input type="text"/>	mm
Karl-Fischer: Solvent	<input type="text"/>		Sample Weight	<input type="text"/>	g	Titration Time	<input type="text"/>	min

Safety Issues

Product	<input type="checkbox"/> Abrasion	<input type="checkbox"/> Corrosion	<input type="checkbox"/> Toxic
	<input type="checkbox"/> Caustic	<input type="checkbox"/> Explosive	<input type="checkbox"/> Inflammable
Vapor	<input type="checkbox"/> Abrasion	<input type="checkbox"/> Corrosion	<input type="checkbox"/> Toxic
	<input type="checkbox"/> Caustic	<input type="checkbox"/> Explosive	<input type="checkbox"/> Inflammable

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Explosion limit in air			Lower	Upper	
Solids at	<input type="text"/>	°C	<input type="text"/>	<input type="text"/>	Kg/m ³
Solids at	<input type="text"/>	°C	<input type="text"/>	<input type="text"/>	% Vol.
Solids at	<input type="text"/>	°C	<input type="text"/>	<input type="text"/>	% Vol.

Ignition Temperature °C

Max. Explosive Pressure °C

Max. rate of pressure increase in 1 m³ test vessel Pascal/Second

Dust Explosive Class St 1 St 2 St 3

Recommended / Specify Safety Measures:

Explosion Proof Class