



**Hygienic and durable** stainless steel production vessels, for cost-effective mixing and blending in the **Pharmaceutical, Chemical, Food and Personal Care industries**



Our dedicated technical department are delighted to offer their expertise to design and build bespoke vessels, including jacketed vessels, low pressure vessels, mixing vessels and complete processing systems.

**Step 1:**

Simply answer the questions below, and we will provide a feasibility price for your project.

**Step 2:**

When you are ready to move to a firm quote to build, we will arrange a consultative call to support the thinking around the bespoke needs of your project.

Please answer the questions as fully as you can. In case of any queries, your dedicated sales representative will be very happy to assist.

**1. What is your required vessel working capacity in litres?**

Note the normal minimum mixing capacity is 1/3 of the maximum.

Maximum working capacity:	L
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**2. What material of construction is required? E.G: 304 or 316L stainless steel.**

Please note: if unspecified, 316L is the default choice for bespoke vessels as this provides the best corrosion resistance.

- 316L grade
- 304 grade



**3. Are there any requirements to heat or cool your product(s) during the mixing process?**

- Yes
- No (Go to question 4)

If yes,

a) Heating Process

Please specify the temperature from which the product should be heated, to what temperature (EG: to heat the mixed products from ambient temperature to 60 °C within 1 hour).

Please specify:

- Heating  Yes  No
- The initial product temperature:  °C
- The aimed product temperature:  °C
- How fast the product should be heated:  Minutes

b) Cooling Process

Please specify the temperature from which the product should be cooled, to what temperature (EG: to cool the mixed products from 60 °C to 24 °C within 1 hour)

Please specify:

- Cooling  Yes  No
- The initial product temperature:  °C
- The aimed product temperature:  °C
- How fast the product should be cooled:  Minutes



**4. Is there any internal pressure requirement for your vessel?**

- No
- Yes – please share some details, EG: URS(User requirement specification)
- I don't know – your sales representative will connect with you to provide assistance

Max working pressure:  bar

Reason for pressurisation:

Guidance for PED Pressure vessel class which is set by the PSV number.

PSV Number =Total Vessel Volume in Litres X Maximum Pressure in Bar

PSV below 50 OR below 0.5 Bar max pressure the PED class is SEP (Sound Engineering Practice)

PSV 50 to 200 is PED Class 1. PSV 200 to 1000 is PED Class 2. PSV 1000 to 3000 is PED Class 3. PSV above 3000 is PED Class 4. Note If the products which are flammable, corrosive the figures PSV limits are reduced by 50%



**5. Are any outlets required, including sanitary outlets?**

- No
- Yes
- I don't know – your sales representative will connect with you to provide assistance

**If yes, please select any/all that apply:**

- Tri-Clamp Ball Size: 0.5"  0.75"  1"  1.5"  2"
- Butterfly Valve Size: 1"  1.5"  2"
- Other – please share some details...

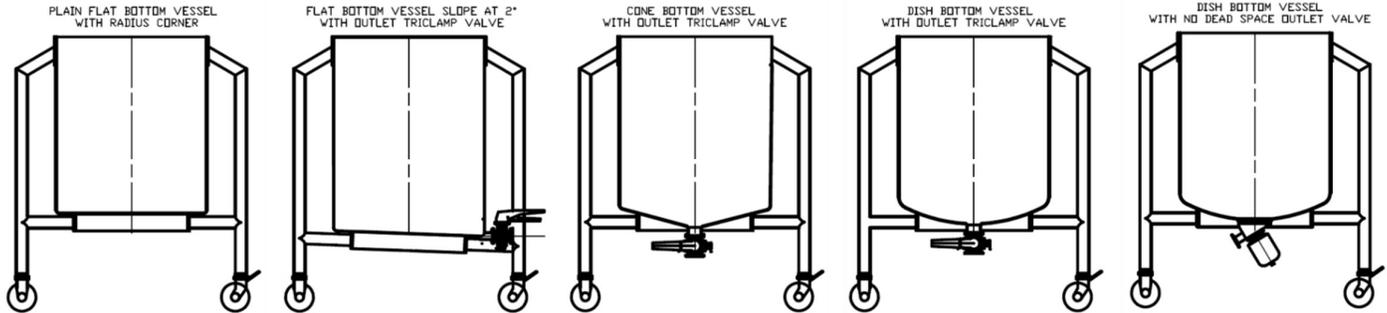
**6. What openings are required on the lid? Select any/all that apply.**

- No openings required
- Port for mixer
- Port for product adding
- Port for process monitoring
- Sight glass
- Sight glass with integrated light
- Other – please share some details...
- I don't know – your sales representative will connect with you to provide assistance

**7. Is there a specific requirement for your vessel base? E.G: Flat or conical bottom. Please use the drawings below to inform your answer.**

- No special requirement
- Flat bottom with radiused corners
- Flat bottom set at 2 degree slope, to drain to valve in the corner
- Conical bottom
- Dished bottom
- Other – please share some details...





**8. Is there a specific requirement for the vessel surface finish, both internal and external?**  
**Please note: Our standard is 0.4µm Ra welds ground for product contact, and 0.8µm Ra welds left as laid for other surfaces.**

- No
- Yes – please share some details...



**9. What is the viscosity of each product to be mixed at each processing stage, including the finished product? See the common examples below:**

Material	Approximate Viscosity at Room Temperature (in centipoise)
Water	1
Milk	3
Motor Oil	85 - 900
Honey	10,000
Condiments (EG: Ketchup, Mustard)	50,000 – 70,000
Sour Cream	100,000
Peanut Butter	250,000

State it here (cP) or (mPas):

Starting Viscosity	
Middle Viscosity	
Ending Viscosity	

What is the mixing process?

- Free dissolving powder into liquid
- Liquid into liquid
- Emulsions
- Other (Please specify)

Products & ingredients used.

Mixing process details (E.g. 50L water added to vessel with 2kg of powder added after)

**10. Do you know of any potential difficulties in processing the products, for example coagulation/lumpy mix?**

- No
- Yes – please share some details...



**11. Are there any other extra requirements specific to your site – E.G vessel graduations or dip stick, cleanroom location, etc?**

- No
- Yes – please share some details...

**12. Is there an ATEX requirement? Explanation of ATEX – do you have any dust/fumes which when mixed with air, could ignite if there is an ignition source (E.g. product contains 70% Ethanol).**

- No (Proceed to question 13)
- Yes

Flammable products

**If yes – do you know which zone?**

- Category 1/Zone 0  
This is for area where explosive mixtures are present continuously, for long periods or frequently. Note Adelphi will not quote Zone 0
- Category 2/Zone 1  
This is for area where explosive mixtures are likely to occur occasionally
- Category 3/Zone 2  
This is for area where explosive mixtures occur infrequently and for short periods of time.
- Unknown

**Is the hazard gas, dust or both?**

- Gas
- Dust
- Both





**13. Is any accompanying certification required?**

- No
- Surface finish
- Material certificate (XRF)
- TSE certificate
- Other

**14. What control box features are required for electric mixer?**

If an electric mixer is requested there will need to be a control box.

Our standard is a 304 stainless steel box with start, stop, speed control by rotary dial (potentiometer) with an emergency stop circuit.

Optional extras are possible, see below.

- Standard
- Mixer speed indicator with sensor to detect actual speed
- Mixer speed indicator via window to inverter display showing drive frequency (related to motor speed)
- Mixer run/delay time timers
- Temperature indicator to display actual temperature of product
- Other

Thank you very much indeed for completing the questionnaire – please return it to your dedicated sales representative.

They will be back in touch with you as soon as possible to provide pricing and give guidance on the next steps involved in the project.

In the meantime, if you have any questions or if Pharma Hygiene Products can be of any further assistance, please don't hesitate to ask.