

LANGUAGE WORK

Describing pharmaceutical equipment

ITEM OR DEVICE	WHY ?	HOW ?
Is equipped <u>with</u> Is fitted <u>with</u> Is provided <u>with</u> features	Intended to (+ infinitive) Designed to (+ infinitive) So as to (+ infinitive) So as not to (+ infinitive) Aimed at -ing For the purpose of -ing	Facilitate/enhance/improve Increase/decrease/eliminate Prevent/impede/stop Provide Modify/change/alter Safeguard/protect a user Safeguard/protect against ensure

The verbs **ALLOW / PERMIT** **ENABLE**

Are never followed directly by an infinitive. Note carefully.

*It allows **us** to monitor growth at all times.*

*It allows **the growth** to be monitored.*

*It permits **us** to monitor the growth.*

*It enables **us** to monitor the growth.*

*It enables **the growth** to be monitored.*

The verbs **PROVIDE** **ENSURE**

It provides ideal conditions.

It provides usable data.

It provides us with data.

It ensures proper conditions.

It ensures us of proper growth conditions.

MAKE IT POSSIBLE + infinitive

It makes it possible to monitor the growth.

It makes it possible for us to monitor the growth.

Now use this information on fermentors before you complete the statements or answer the questions in the PRACTICE exercise.

SIZE	PROCESSES	DESCRIPTION
Variable : largest up to 400,000 l	A) anaerobic: less complicated/major requirement: a system for heat removal B) aerobic: far more complicated/of most interest in industrial microbiology	A) material: stainless steel B) shape: cylindrical C) special outfitting: external <i>cooling jacket</i> allowing circulation of steam or coolant 1. maintenance inside of proper temperature and sterilization 2. <i>internal coils</i> frequent in very large-scale fermentors D) <i>Aeration system</i> crucial (supply of oxygen vital); therefore 2 distinct aeration systems 1. <i>a sparger</i> : ring-like or nozzle-like device featuring holes enabling air to escape at high pressure 2. <i>an impeller</i> : beater-like device to stir contents and ensure even mixture of culture and air <i>baffles</i> : vertical structures inside fermentor to break up clusters and further ensure mixture evenness

PRACTICE Complete the statements or answer the questions referring to large-scale fermentors. In answering the questions, avoid using the same expressions as those in the questions themselves.

A fermentor is _____ an external cooling jacket for the purpose _____.

In some cases, internal coils _____ to _____ maintenance of proper temperature.

The mixture must _____ oxygen at all times, and therefore, most fermentors _____ two separate aeration systems.

What is the sparger intended to ensure?

What is the aeration system designed to accomplish?

What is the purpose of baffles?

What does the impeller ensure?

What makes it possible to break up the clusters?

What would happen in the event of impeller failure or breakage?