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## Biofuel Production Mott Sparger Element

**Industry:** Alternative Energy – Bioethanol Production

*Bioethanol is a fuel derived from renewable sources of feedstock; typically plants such as wheat and sugar beet. Bioethanol can be mixed with petrol and burned in car engines with few alterations to the existing petrol distribution infrastructure, and no alterations to the cars themselves, as long as the amount of ethanol in the fuel is not above 5% by volume. This makes it a convenient, clean, and environmentally sound substitute for fossil fuels.*



**Application:**

A world leader in the engineering and construction of alcohol and bioethanol plants required efficient gas/liquid contacting to promote effective yeast propagation in the fermenter segment of their process.

Process efficiency is key to the profitability of bioethanol production. At the fermentation step, yeast transforms the monosaccharides derived from the raw material feedstocks into alcohol. Yeast growth is promoted in the fermenters by adding nutrients and air to the feedstock. These fermentation units can be batch or continuous processes. The more efficient the growth of yeast - the more efficient the fermentation process.

The client required specified intrusive pipe line spargers that could handle the gas flow and be easily installed and maintained in their fermenter design.

**Solution:**

For high-efficiency gas/liquid contacting, miniature, slow-moving bubbles are required. Mott porous metal effectively produces these types of fine bubbles and introduces the gas into liquids through thousands of tiny pores. These fine bubbles are more numerous and far smaller than those produced by drilled pipe and other sparging methods. With thousands of pores over its surface, larger volumes of gas can be delivered with very high specific area. For example, for the same volumes of gas, bubbles of 1 mm (0.039") diameter have approximately 6.35 times more gas/liquid contact surface area than bubbles of 0.35 mm (0.25") diameter.

After obtaining the necessary process information from the client, Mott application engineers determined the required sparging area and specified the appropriate size, alloy and media grade of the spargers.

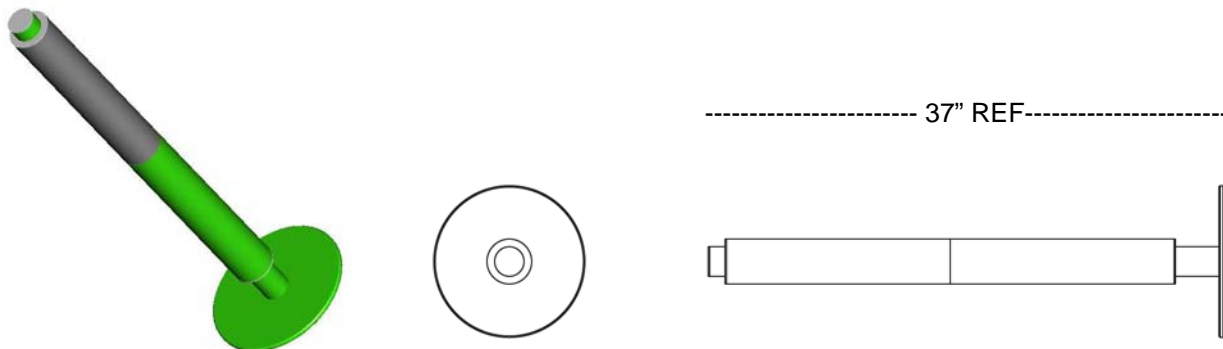


**Product Description:**

Mott In-Line Intrusive Type 2200-CD\* Reinforced Sparger Element

The part consisted of a 316LSS porous rolled and welded cylinder with 316LSS impingement tubing, flange and end cap. Mott’s Element Product Description: 2232-CD16\*-20/12-AD00\*-AA \*= special per customer’s requirements.

Mott’s Element CPN: 2218084-002



**Mott Advantage:**

Distinct advantages of porous metal sparging devices include uniform and high-precision porosity, strength and durability, resistance to corrosion, tolerance of high temperatures and pressures, and cleanability. These advantages are why porous metal is the perfect replacement for ceramic, plastic or tubing-type devices.

Mott Corporation has been dedicated to the development, application and refinement of porous metal media since 1959. The Company’s design teams are continually engineering porous metal components, sub-assemblies and finished products for applications in a wide variety of industries, including energy, food and beverage, medical, biopharmaceutical, chemical, petrochemical, instrumentation, environmental, and semiconductor.

For additional questions or information, please feel free to visit our website (<http://www.mottcorp.com>) or send us an email to [Quest@mottcorp.com](mailto:Quest@mottcorp.com).