

PrometheanParticles



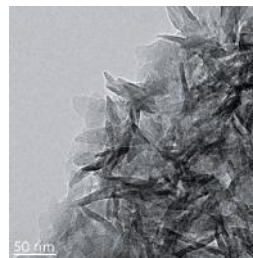
Formulating solutions with nanomaterials

MIL-53 Metal Organic Framework (MOF) production at commercial scale (40kg+/h) by Promethean Particles Ltd

Promethean Particles has the world's largest continuous multi-material nanoparticle manufacturing plant.

Following the launch of its full scale nanomaterial facility in Nottingham (over 1000 tons per year capacity), UK-nanoparticle manufacturer **Promethean Particles** is demonstrating its full scale commercial production capabilities by producing a selection of key products.

Promethean has now produced the **Metal Organic Framework material (MOF)**, aluminum terephthalate most commonly called MIL-53 (Al), which is used in next generation gas adsorption, gas storage, gas separation and healthcare applications.



Potential applications:

- **Gas storage** (from hydrogen storage to the capture and storage of carbon dioxide)
- **Gas separation** - a nanobarrier to selectively separate contaminants from a feed/product line
- **Chemical sensing** - creating high surface areas for molecular sensors

Advantages/benefits:

- **Incredibly high specific surface area** (typically >2,000 m²/g) which is available within the porous 3D structure of the MOF
- **Can be produced at all scales** with a production capacity of **40kg+/hour** (or **250 - 1000 tons per year** for MOF materials)
- **Cost of production dramatically reduced** due to the increased scalability
- **Opportunities for continued development** by commercial and academic groups thanks to the large scale supply
- **Other metal-ligand combinations are also available**

Technical Manager Dr. Pete Gooden commented, "The academic community has generated a huge range of MOF materials which show great potential for application within many gas storage applications. However, the lack of availability of large quantities of material at a reasonable price has hindered this potential from being realized. Promethean's plant facility allows MOF materials to be produced at multi-ton scale – this will allow pilot studies to test whether the use of MOFs for CO₂ capture for example, is a realistic possibility."

All materials produced are available for sale. If you are looking at something more specific, Promethean Particles has long term experience in running **feasibility studies as per its customers' requirements.** For more information on potential material solutions or pricing, please **get in touch with our sales team at info@proparticles.co.uk or +44(0)115 9678119.**