

Cu(MOF-14)

Copper
Metal Organic Framework



MOF



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NEXT 

Copper

Metal Organic Framework

Textiles, which are unique and necessary to human beings, are used in clothing as well as in decorative and industrial applications. Among the wide range of available nanomaterials are metal-organic frameworks (MOFs), which comprise an expanding class of porous crystalline materials built from nodes of metal ions connected by organic linkers. Because of their high surface areas, tunable pore sizes, and chemical versatility. Thus, the immobilization of copper based MOFs onto textiles is a promising way to fabricate functional textiles, and one method involves the deposition of MOFs onto polymer solutions and the production of functional nonwoven fabrics by an electro spinning procedure.

Quick Facts

Stock No.	:	NS6130-12-000885
CAS	:	7440-50-8
Purity	:	99 %
APS	:	30-40µm
Molecular Formula	:	C ₂₇ H ₁₈ Cu ₃ O ₆
Molecular Weight	:	604.87 g/mol
Form	:	Powder



Properties

- Large Surface Area
- High degree of crystallinity
- Low density
- Uniform channels
- Porosity
- High thermal stability
- Chemical tailor ability

Cu
HKUST-1

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Applications

01 Food

- Quality control (e.g. moisture control)
- Food storage (e.g. suppression of ripening agents)
- Shelf life management (e.g. triggered release of ripening agents)
- Delivery of agrochemicals (e.g. triggered release of fertilizers etc.)

02 Gas storage

- Compressed gas storage (e.g. natural gas, hydrogen, etc.)
- Toxic and reactive gas systems (e.g. via sub-atmospheric storage systems)
- Carbon capture and sequestration (CCS)

03 Conductivity

- Electronics
- Batteries (e.g. electrodes, electrolytes, etc.)
- Optoelectronic devices (e.g. solar cells)
- Additives

04 Catalysis

- Catalytic support and immobilization
- Encapsulation of catalytic active species
- Unprecedented selectivity and activity

05 Sensoring and detection

- Gas/vapor and small molecule detection
- Luminescence (e.g. scintillation)
- Medical diagnostics
- Explosive detection

06 Gas Treatment

- Separation (e.g. hydrocarbons, CO₂, O₂, H₂, NH₃, H₂S, toxics, etc.)
- Purification
- Impurity and odor removal
- Filtering (e.g. molecular sieves)

07 Textile upgrading

- Additives
- Personal protection
- Chemical, biological, radiological and nuclear (CBRN) defense

08 Gas and liquid adsorption

- Drug Delivery (e.g. slow release of target molecules)
- Water harvesting
- Removal of toxic and hazardous substances (e.g. chemical warfare agents)
- Heat transformation (e.g. adsorption heat pumps)
- Respiratory systems (e.g. gas masks)
- Water treatment (e.g. heavy metal removal)



ISO 9001:2015
CERTIFIED COMPANY

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