

Cu(HKUST-1) **Copper** Metal Organic Framework





MOF



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Copper

Metal Organic Framework

Metal-organic frameworks (MOFs) are porous materials formed via strong metal-ligand bonds between metal cations and organic linkers. MOFs have many applications in gas storage, separation and heterogeneous catalysis. Porous metal organic frameworks (MOFs) are of significant interest both in academics and industry due to their coordination structure, diverse topologies and potential applications in gas storage, separation, catalysis and drug delivery.

Quick Facts

Synonyms	:	Cu (HKUST-1)
Stock No.	:	NS6130-12-000876
CAS	:	7440-50-8
Purity	:	99 %
APS	:	30-40 μ m
Molecular Formula	:	C ₁₈ H ₆ Cu ₃ O ₁₂
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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