

# MIL (47V)

**Vanadium**  
Metal Organic Framework



MOF



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# Vanadium

## Metal Organic Framework

Metal-organic frameworks (MOFs) with adjustable structures and large surface areas are attracting ever-increasing attention in the field of next-generation energy storage. Metal-organic frameworks (MOFs) are porous solids with high surface areas, permanent porosities, good thermal and chemical stabilities, and customizable chemistry and functionality. Because of these excellent properties, MOFs have been studied in a large variety of fields, such as catalysis, luminescence science, medical applications, membrane technology, and gas storage, separation, and purification.

### Quick Facts

Synonyms	:	MIL-47V
Stock No.	:	NS6130-12-000881
CAS	:	7440-62-2
Purity	:	99 %
APS	:	30-40µm
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

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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, CO<sub>2</sub>, O<sub>2</sub>, H<sub>2</sub>, NH<sub>3</sub>, H<sub>2</sub>S, 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)



20ZICE4589C



19ZAZGO1274G



20ZICE4588M

ISO 9001:2015  
CERTIFIED COMPANY

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