Graphene Supermarket 大面积二硫化钼晶体

中文名称： Graphene Supermarket 大面积二硫化钼晶体

英文名称： Molybdenum Disulfide (MoS2) Crystals large area

货　号： ML1179

CAS 号： 1317-33-5

包　装： 1 盒

参　数

纯　度： **99%**

面　积： **2 cm2**

保质期： 1 年常温干燥避光

Molybdenum Disulfide (MoS2) Crystals

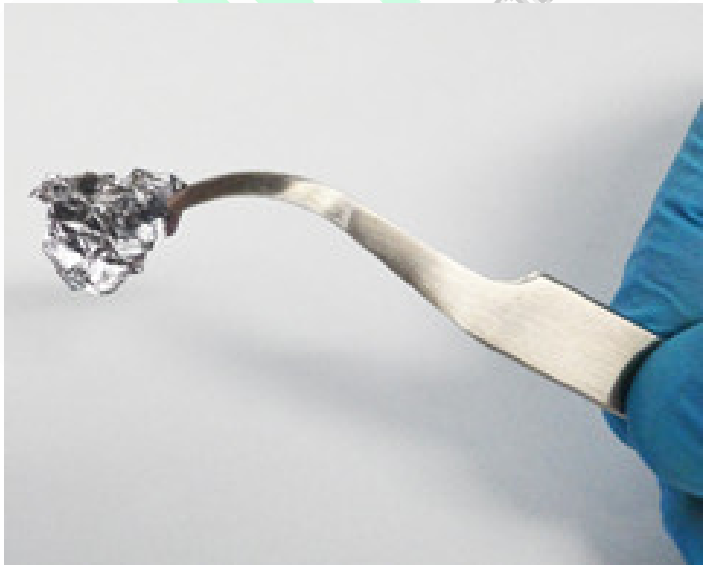
MoS2 is a naturally-forming layered transition metal dichalcogenide which may be mined. It is a silvery-black crystal which looks and feels similar to crystals of graphite.

Properties:

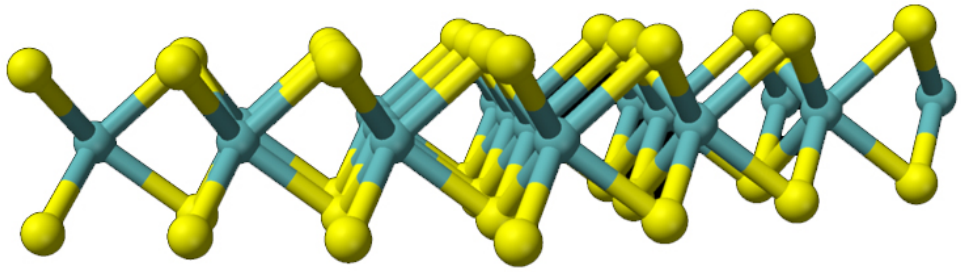
Single crystal

2cm2 average area, or more

purity: >99%

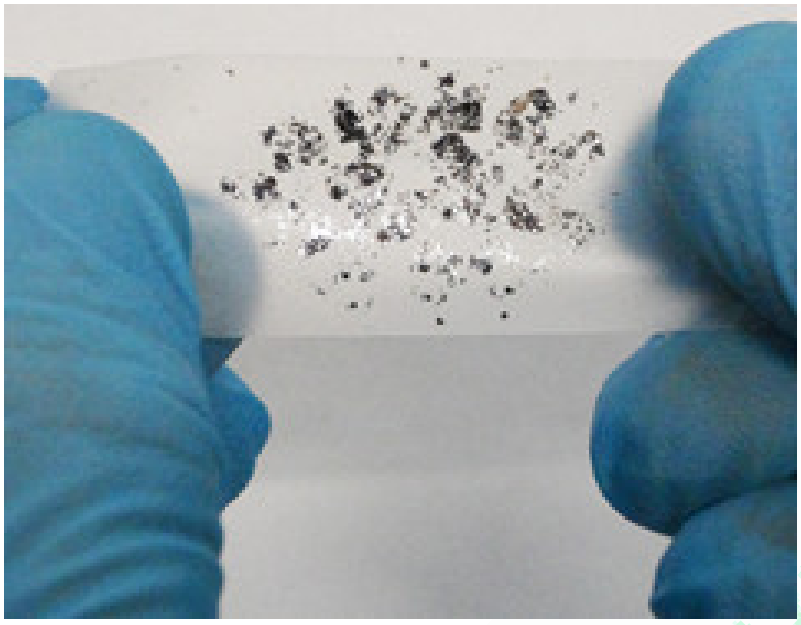


Each Mo(IV) center of MoS2 is occupying a trigonal prismatic coordination sphere, which is bound to six sulfide ligands. The sulfur centre is connected to three Molybdenum centres, which are pyramidal. The trigonal prisms are layered, sandwiching molybdenum atoms between layers of sulfur atoms.

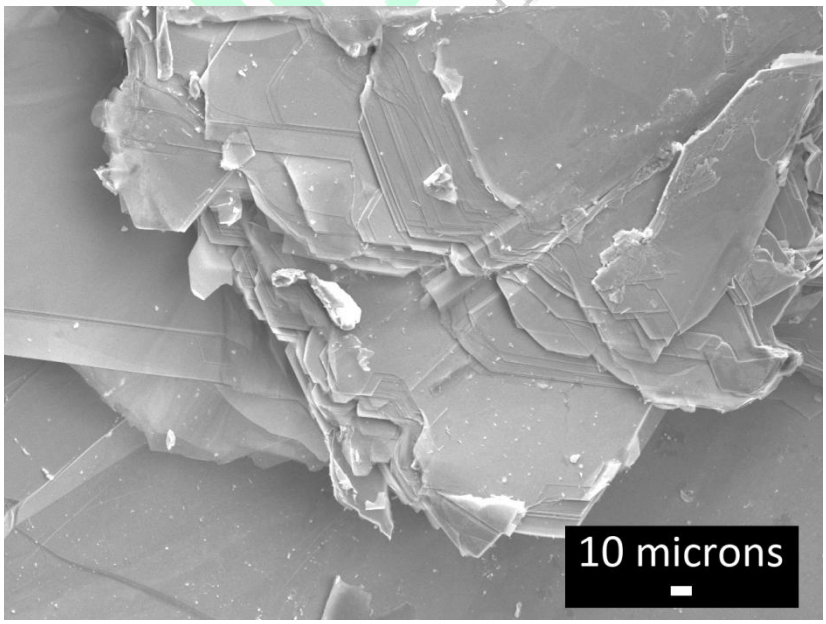


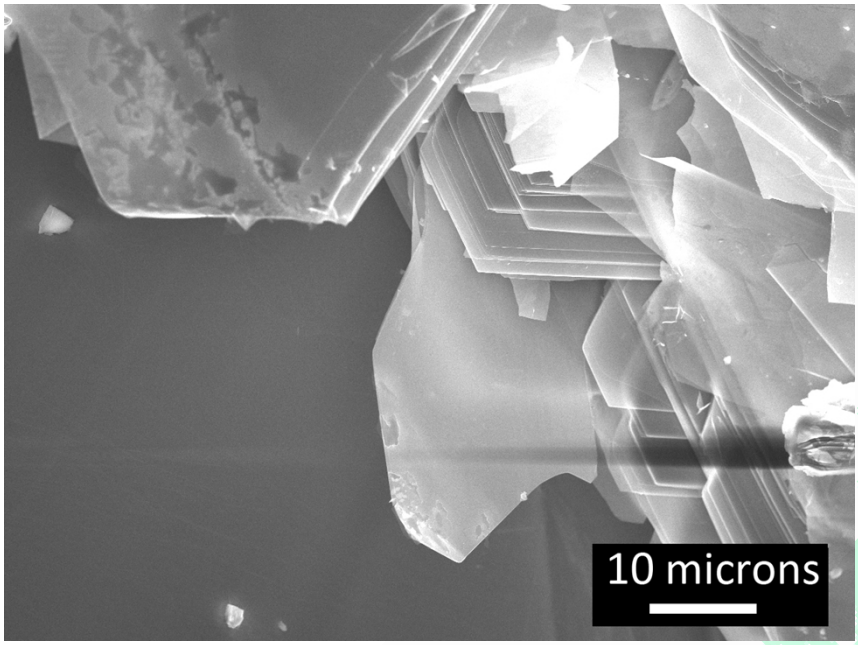
Depiction of MoS2 Crystal Structure1

MoS2 has a number of unique properties which allow it potential applications in transistors, flexible displays, and optics. For one, it possesses a direct bandgap, which is necessary for most transistor applications. It also has unique optical properties, namely having a high level of photoluminescence; this property gives it potential applications in making walls which can glow or windows which display images. It being an ultra-thin, transparent, flexible conductor makes it a likely material-of-choice for transparent, flexible displays.



MoS2 may be mechanically exfoliated using scotch tape to create 2D MoS2 samples, similarly to graphene. To do this, use a piece of scotch tape, and press a thin piece of MoS2 to it. Then, take the other end of the tape and stick it together with the tape with MoS2 on it. Do that several more times, eventually sticking the tape to a clean substrate (such as a Si/SiO2 wafer) and peel it back. You will then have multi and monolayer MoS2 samples on your substrate, which can be viewed under a microscope.





In the above SEM images, you can see the layering of MoS2

Academic reference:

Single-Layer MoS2 Transistors, Radisavljevic et al., Nature Nanotechnology, 2011, 6 (March). pp 447-500

Stretching and Breaking of Ultrathin MoS2, Bertolazzi et al., ACS Nano, 2011 (12), 5. 9703-9709