

**IS**  
**THERE**  
**OXYGEN**  
**ON MARS ?**

1  
00:00:02,640 --> 00:00:04,280  
Is There Oxygen on Mars?

2  
00:00:08,336 --> 00:00:10,000  
We Asked a NASA Technologist.

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00:00:10,000 --> 00:00:15,760  
Yes, Mars has oxygen but not very much and  
definitely not enough for you to just go out and

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00:00:15,760 --> 00:00:20,880  
breathe on the surface of Mars. The density of the  
oxygen on Mars is about 1/10,000th of what we have

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00:00:20,880 --> 00:00:27,882  
here on Earth. But Mars' atmosphere does have a lot  
of carbon dioxide — about 500 times more CO<sub>2</sub> than

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00:00:27,882 --> 00:00:33,840  
So if we want to harvest oxygen on Mars for  
use by future explorers or launch systems, a better

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00:00:33,840 --> 00:00:39,680  
way might be to pull some of it out of the CO<sub>2</sub> and  
use that instead. So that's where MOXIE comes in.

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00:00:39,680 --> 00:00:44,080  
MOXIE is a technology on NASA's Perseverance  
rover and it has proven for the very first

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00:00:44,080 --> 00:00:49,040  
time that we can extract oxygen from the carbon  
dioxide in the Martian atmosphere. It's a tech

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00:00:49,040 --> 00:00:54,240  
demo so it only produces a small amount of oxygen.  
But for future human exploration, we would need to send

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00:00:54,240 --> 00:00:59,520

a scaled up version, maybe 200 times larger than the current MOXIE. So if such a system were landed

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00:00:59,520 --> 00:01:03,600  
on Mars, some of this would provide oxygen for the astronauts to breathe but most of it would

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00:01:03,600 --> 00:01:09,040  
be used as rocket propellant to get astronauts off the surface of Mars and back to Earth.

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00:01:09,040 --> 00:01:13,901  
So is there oxygen on Mars? Not much, but that's okay because we can make it ourselves.