

# Measuring Electrical Conductivity to Study the Formation of Brines Under Martian Conditions

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## Citation

Nazarious, M.I., Ramachandran, A.V., Zorzano, M.P., Martin-Torres, J. Measuring Electrical Conductivity to Study the Formation of Brines Under Martian Conditions. *J. Vis. Exp.* (173), e61217, doi:10.3791/61217 (2021).

## Date Published

July 28, 2021

## DOI

10.3791/61217

## URL

jove.com/video/61217

## Materials

Name	Company	Catalog Number	Comments
84 $\mu$ S/cm and 1413 $\mu$ S/cm conductivity calibration standard	Atlas Scientific	CHEM-EC-0.1	
Arduino Uno	Arduino	8058333490090	
Calcium Chloride	Sigma Aldrich	CAS Number: 10043-52-4	Anhydrous, free-flowing, $\geq 96\%$
Carbon Dioxide gas cylinder	AGA Gas		
Experiment container			3D printed in PLA or milled in aluminum/other metal
EZO Conductivity circuit	Atlas Scientific	EZO-EC	
EZO RTD circuit	Atlas Scientific	EZO-RTD	
Ferric Sulphate	Sigma Aldrich	CAS Number: 15244-10-7	97%
Gold electrodes			Custom designed
HEPA filter	Nitto	NTF9317-H02	
Liquid Nitrogen tank	AGA Gas		
Magnesium Perchlorate	Sigma Aldrich	CAS Number: 10034-81-8	Free-flowing, $\geq 99.0\%$
Pressure gauge	Pirani	CCPG-H2-1	$1 \times 10^{-9}$ to 1000 mbar
PT100 sensor			
PT1000 sensor			
Scotch-Weld Epoxy Adhesive	3M	EC-2216 B/A	
Sodium Perchlorate	Sigma Aldrich	CAS Number: 7601-89-0	Free-flowing, $\geq 98.0\%$
Sodium salt of alginic acid (SAP)	Sigma Aldrich	CAS Number: 9005-38-3	Powder
Sterile water	VWR Chemicals BDH	CAS Number: 7732-18-5 VWR: 75881-014	Water ASTM Type II, Reagent Grade
Swagelok syringe	Fischer scientific	KD Scientific 780812	
T/RH probe	Vaisala	HMT 334	(-70 to + 180C) and (0 to 100 % RH)
Teraterm			
Whitebox Labs Tentacle Shield	Atlas Scientific	TEN-SH	