



Fecha de Calibración: 29/8/2022

Fecha de Emisión: 29/8/2022

Comercial Argentina S.R.L.  
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CERTIFICADO DE CALIBRACION N°: 188684

Cliente:	QUINPE S.R.L.	Equipo en uso:	REPARADO Y CALIBRADO
Instrumento:	DETECTOR ALTAIR 4XR (LEL, O2, CO, H2S) Grupo: 8 - (Portable Instrument)	Equipo nuevo:	NO
S/N:	E0-00233823-J21	Fabricante:	Mine Safety Appliances Company

Gas Patrón	Objetivo a Verificar	Incert. del Gas	Número de Lote	Mediciones			Incert. de la Medición	Rango	SN sensor
				1	2	3			
Acido Sulfhídrico (H2S) 20 ppm	20 ppm	10	BC415679	20	20	20	2,0817 ppm	0 - 200 ppm	
Metano (CH4) 1,45 %	58 % LEL	5	BC415679	58	58	58	2,9569 % LEL	0 - 100 %	
Monóxido de Carbono (CO) 60 ppm	60 ppm	5	BC415679	60	60	60	3,0551 ppm	0 - 2000 ppm	
Oxígeno (O2) 15 %	15 %	5	BC415679	15	15	15	0,9465 %	0 - 30 %	

#### ALARMAS

	Deficiency Alarm	Exposure Alarm	STEL Alarm	TWA Alarm
Acido Sulfhídrico (H2S)	10 ppm	15 ppm	15 ppm	10 ppm
Metano (CH4)	10 %	20 %	-	-
Monóxido de Carbono (CO)	25 ppm	100 ppm	100 ppm	25 ppm
Oxígeno (O2)	19.5 %	23.0 %	-	-

Calibración: Contraste con gas patrón trazable a patrones de peso NIST

Condiciones ambientales de Calibración: Neuquen

Temperatura (°C) 19°C  
Presión atmosférica (hPa): 1021 hPa  
Humedad (%): 22 %

Procedimientos de Calibración: De acuerdo al manual de cada equipo

(\*) Las especificaciones de tolerancia de medición se encuentran informadas en el manual del equipo.

"La calibración de los equipos, instrumentos y dispositivos utilizados, los métodos de análisis aplicados, y las acciones u omisiones son realizadas en forma exclusiva por personal de Comercial Argentina S.R.L. sin intervención de COMPAÑIA MSA DE ARGENTINA S.A. quien no responderá por los mismos."

Limites en el uso: Indicados en el manual del equipo

Los resultados son válidos solamente para el equipo ensayado no siendo extensivos a cualquier otro.

La trazabilidad de los detectores MSA se realiza a través del número de serie

La reproducción de este documento sólo podrá hacerse íntegramente sin ninguna alteración.

Federico Carnevale  
SERVICIO TÉCNICO  
Comercial Argentina S.R.L.

Cantidad de hojas: 1



## CERTIFICATE OF ANALYSIS

ISO 9001:2015 CERTIFIED  
ISO 17034:2016 ACCREDITED  
ISO/IEC 17025:2017 ACCREDITED

1202 E Sam Houston Parkway S.  
Pasadena, TX 77503  
Phone: (800) 548 2268 Fax: (713) 928 9961

PO Number: 4503044165  
Manufactured For:  
MSA Safety Sales, LLC  
1000 Cranberry Woods Drive  
Cranberry Township PA 16066  
United States Of America

Work Order No: 36604400  
Certification Date: 03-Feb-2022

Customer Part No: 10045035  
Cylinder Size: 58DALS  
Cylinder Content: 58 L (2 CU.FT.) @ 70 F (21 C) & 500 PSIG (3445Kpag)  
Cylinder Lot No: 262062, 288 of 476 cylinders  
Cylinder Serial Nos:

Cylinder Type: ISO 7866

BC413407, BC414828, BC414900, BC415365, BC415371, BC415376, BC415377, BC415378, BC415379, BC415380, BC415382, BC415383, BC415386, BC415393, BC415395, BC415399, BC415401, BC415403, BC415404, BC415406, BC415407, BC415408, BC415412, BC415416, BC415421, BC415429, BC415430, BC415431, BC415433, BC415453, BC415458, BC415465, BC415467, BC415468, BC415473, BC415477, BC415479, BC415481, BC415488, BC415489, BC415491, BC415492, BC415494, BC415497, BC415498, BC415501, BC415504, BC415506, BC415507, BC415508, BC415515, BC415583, BC415585, BC415587, BC415590, BC415591, BC415592, BC415593, BC415594, BC415599, BC415601, BC415603, BC415605, BC415606, BC415607, BC415608, BC415614, BC415615, BC415616, BC415617, BC415619, BC415623, BC415627, BC415629, BC415633, BC415635, BC415636, BC415637, BC415638, BC415646, BC415647, BC415648, BC415650, BC415652, BC415655, BC415658, BC415660, BC415663, BC415672, BC415673, BC415676, BC415678, BC415679, BC415683, BC415688, BC415710, BC415712, BC415715, BC415717, BC415721, BC415723, BC415724, BC415726, BC415727, BC415759, BC415763, BC415771, BC415774, BC415778, BC415782, BC415784, BC415794, BC415801, BC415804, BC415807, BC415809, BC415810, BC415814, BC415815, BC415816, BC415818, BC415820, BC415821, BC415822, BC415823, BC415824, BC415826, BC415827, BC415828, BC415829, BC415831, BC415832, BC415834, BC415835, BC415836, BC415838, BC415844, BC415846, BC415847, BC415849, BC415855, BC415858, BC415861, BC415862, BC415870, BC415872, BC415873, BC415875, BC415878, BC415880, BC415881, BC415886, BC415888, BC415889, BC415896, BC415897, BC415900, BC415908, BC415912, BC415913, BC415919, BC415920, BC415922, BC415927, BC415929, BC415930, BC415935, BC415938, BC415941, BC415949, BC415955, BC415956, BC415958, BC415963, BC415964, BC415965, BC415966, BC415968, BC415969, BC415970, BC415971, BC415975, BC415976, BC415980, BC415981, BC416002, BC416005, BC416010, BC416013, BC416014, BC416018, BC416040, BC416050, BC416127, BC416130, BC416133, BC416134, BC416137, BC416138, BC416163, BC416166, BC416170, BC416193, BC416240, BC416283, BC416507, BC416512, BC416513, BC416520, BC416534, BC416536, BC416540, BC416542, BC416543, BC416566, BC416568, BC416573, BC416574, BC416577, BC416588, BC416599, BC416606, BC416612, BC416613, BC416633, BC416634, BC416647, BC416661, BC416663, BC416664, BC416668, BC416671, BC416683, BC416688, BC416702, BC416703, BC416704, BC416706, BC416712, BC416717, BC416736, BC416750, BC416752, BC416790, BC416890, BC416911, BC416919, BC416921, BC416922, BC416926, BC416929, BC416936, BC416950, BC418495, BC418540, BC418541, BC418546, BC418553, BC418562, BC418564, BC418565, BC418570, BC418572, BC418578, BC418580, BC418590, BC418593, BC418594, BC418598, BC418602, BC418625, BC418628, BC418635, BC418639, BC418641, BC418643, BC418661, BC418669, BC418680, BC418685, BC418686, BC418721, BC418816, BC418825, BC418853, BC418858, BC418868, BC418877, BC418883

Expiration Date: Jan 2024

Component	Nominal	Accuracy	Analytical Method
HYDROGEN SULFIDE	20 PPM (vol)	+/- 10%	Automated Electrochemical Sensor
CARBON MONOXIDE	60 PPM (vol)	+/- 5%	Horiba CO Analyzer VIA-510_97KP6EHE
PENTANE EQUIVALENT 58% LEL	(METHANE 1.45% vol)	+/- 5%	Mocon 9000 THC_0317DN0931