



H16



Fecha de Calibración: 1/8/2022

Fecha de Emisión: 1/8/2022

Comercial Argentina S.R.L.
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CERTIFICADO DE CALIBRACION N°: 186852

Cliente:	GREEN OIL SERVICES SA	Equipo en uso:	REPARADO Y CALIBRADO
Instrumento:	Altair 4X Grupo: 8 - (Portable Instrument)	Equipo nuevo:	NO
S/N:	E1-00205031-B13	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 Sulfhidrico (H2S) 20 ppm	20 ppm	10	BC319252	20	20	20	2,0817 ppm	0 - 200 ppm	
Metano (CH4) 1,45 %	29 % LEL	5	BC319252	29	29	29	1,5607 % LEL	0 - 100 %	
Monóxido de Carbono (CO) 60 ppm	60 ppm	5	BC319252	60	60	60	3,0551 ppm	0 - 2000 ppm	
Oxígeno (O2) 15 %	15 %	5	BC319252	15	15	15	0,9465 %	0 - 30 %	

ALARMAS

	Deficiency Alarm	Exposure Alarm	STEL Alar	TWA Alarm
Acido Sulfhidrico (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): 1017 hPa
Humedad (%): 41 %

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 COMPAÑÍA MSA DE ARGENTINA S.A. quien no responderá por los mismos."

Límites 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

PORTAGAS
by Linde

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: 4502888480
Manufactured For:
MSA Safety Sales, LLC
1000 Cranberry Woods Drive
Cranberry Township PA 16066
United States Of America

Work Order No: 35165100
Certification Date: 04-May-2021

Customer Part No: 10045035
Cylinder Size: 58DALS
Cylinder Content: 58 L (2 CU.FT.) @ 70 F (21 C) & 500 PSIG (3445Kpag)
Cylinder Lot No: 249899, 130 of 500 cylinders

Cylinder Type: ISO 7866

Cylinder Serial Nos: BC308386, BC308485, BC308522, BC310058, BC314070, BC314228, BC314232, BC314836, BC315616, BC316079, BC316089, BC316093, BC316116, BC316190, BC316207, BC316254, BC316333, BC316349, BC316351, BC316407, BC316656, BC316703, BC317464, BC317831, BC318478, BC318495, BC318516, BC318519, BC318520, BC318523, BC318536, BC318543, BC318547, BC318553, BC318555, BC318569, BC318572, BC318574, BC318577, BC318578, BC318579, BC318581, BC318588, BC318589, BC318590, BC318593, BC318596, BC318597, BC318600, BC318604, BC318612, BC318613, BC318614, BC318622, BC318624, BC318629, BC318630, BC318631, BC318634, BC318639, BC318640, BC319042, BC319084, BC319085, BC319088, BC319091, BC319092, BC319094, BC319095, BC319100, BC319107, BC319118, BC319119, BC319123, BC319125, BC319126, BC319133, BC319137, BC319138, BC319139, BC319145, BC319146, BC319147, BC319152, BC319157, BC319161, BC319163, BC319165, BC319178, BC319179, BC319193, BC319199, BC319207, BC319218, BC319223, BC319224, BC319225, BC319230, BC319238, BC319241, BC319244, BC319246, BC319247, BC319249, BC319252, BC319255, BC319259, BC319271, BC319273, BC319275, BC319293, BC319294, BC319295, BC319296, BC319299, BC319300, BC319304, BC319306, BC319310, BC319314, BC319317, BC319318, BC319325, BC319329, BC319341, BC319342, BC319344, BC319345, BC319349, BC319352

Expiration Date: Apr 2023

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
OXYGEN	15%(vol)	+/- 5%	Teledyne 3000M Series Percent Oxygen Analyzer
NITROGEN	BALANCE		

The mixture was manufactured or transfilled from a standard which has been gravimetrically blended with traceability through NIST to the International System of Units (SI) balance. Balances are calibrated by a certified third party with certified NIST weights and NIST test numbers. NIST Number: BU70910-041220. The uncertainty is expressed as an expanded uncertainty $U=kuc$ with uc determined by experiment and a coverage factor $k=2$. The certified value $\pm U$ is presented with a level of confidence of approximately 95%.

Anna L. Charles

Quality Assurance Manager